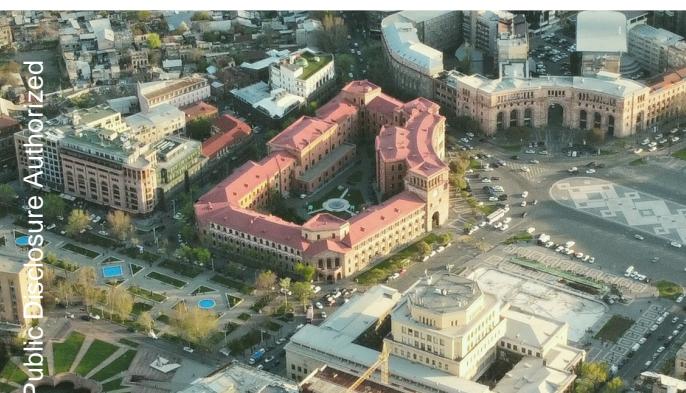




# ARMENIA PUBLIC EXPENDITURE REVIEW

## IMPROVING SPENDING EFFICIENCY

October 2023



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## Acknowledgments

This report was prepared under the guidance of Sebastian Molineus (Regional Director for the South Caucasus), Lalita Moorty (Regional Director, Equitable Growth, Finance and Institutions), Carolin Geginat (Country Manager, Armenia) and Antonio Nucifora (Practice Manager, Macroeconomics, Trade and Investment). The report was led by Arvind Nair (Senior Economist, Macroeconomics, Trade and Investment) and Armineh Manookian (Senior Economist, Macroeconomics, Trade and Investment).

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Chapter 1 incorporates the following inputs: (i) Commitment to Equity (CEQ) analysis conducted by Haydeeliz Carrasco Nunez (Consultant), Jia Gao (Research Analyst), Dhiraj Sharma (Senior Economist), Alan Fuchs Tarlovsky (Lead Economist), and Maria Fernanda Gonzalez Icaza (Economist); (ii) Debt Sustainability Analysis (DSA) simulations, conducted by Josip Funda (Senior Economist); and (iii) Expenditure benchmarking using the BOOST database conducted by Eric Anthony Lacey (ET Consultant) and Massimo Mastruzzi (Senior Economist). Chapter 2 incorporates case studies using the Geospatial Planning and Budgeting Platform, with inputs by Parvathy Krishnan (Consultant). Chapter 3 incorporates results from analysis on social protection different programs coverage, adequacy, and incidence by quantiles. Chapter 4 incorporates results from a study on the pharmaceutical market and pharmaceutical prices initiated under the PER and conducted by MPG LLC (Gallup International in Armenia) in the second half of 2022.

The team would also like to thank officials from the Ministry of Finance, the Ministry of Economy, the Ministry of Territorial Administration and Infrastructure, the Ministry of Health, and the Ministry of Labor and Social Affairs for data sharing and extensive discussions, which shaped the findings of this report.

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## **Key Messages**

**Armenia's fiscal performance has improved during the past two decades, supported by reforms.** Revenue collection has converged with income and regional peers, overall spending levels have remained prudent, and debt levels remain sustainable. Fiscal policy has been counter-cyclical and progressive but has had a limited impact on economic growth.

**Spending efficiency is a key area of concern.** Expenditure efficiency in areas such as infrastructure, road transport, health, and education are significantly behind the global efficiency frontier. For example, in health, if spending reached the global efficiency frontier, Armenia could be spending AMD 3.5 billion less to achieve the same under-five mortality outcomes.

**The fiscal implications associated with the policy proposals in the 2021-2026 government program are significant.** Implementing key selected policy proposals in the program could drive an increase in spending of about 3 percent of GDP, compared to a no reform scenario. This report focuses on the following proposals: increasing capital expenditure, changes to social assistance and pensions, and phased introduction of Universal Health Care. Not all policies in the 5-year program are covered, and thus the fiscal impact of the 5-year program could be even higher.

**This additional fiscal impact could lead to debt sustainability concerns in the event of an economic shock.** In such a case, if the policy proposals are implemented, debt is projected to breach the statutory threshold of 60 percent of GDP by 2026. Additionally, interest payments may increase to almost 20 percent of total spending from 11 percent of total spending in 2022.

**Improving spending efficiency early can provide an important cushion in the event of an economic shock.** This report highlights options for potential efficiency gains of 0.5 percent of GDP through 2026 from more efficient social protection and health spending. Other gains can be identified through targeted spending reviews in areas such as education and roads. Additionally, more ambitious revenue and tax policy reforms need to be identified, which can provide additional fiscal space.

**Key reforms proposed to improve spending efficiency include:**

- **For capital expenditures,** improving data for planning, budgeting, and monitoring purposes, updating asset registries, and costing all sector strategies.
- **For pensions,** phasing out contributions to Pillar 2 and harmonizing increases in basic and labor pensions.
- **For social assistance,** piloting and implementing the new Vulnerability Assessment System for targeting of social assistance, considering a freeze in the nominal amount of the Child-Birth Grant (CBG), and introducing an integrated information system.
- **For health,** carefully costing the UHC reform to understand its fiscal implications before rollout, introducing pharmaceutical policies to reduce medicine prices, and introducing a mechanism to govern the revision of the benefits package.

## Executive Summary

- 1. Armenia faced twin shocks in 2020 – the COVID-19 pandemic and military confrontation with Azerbaijan – which led to one of the sharpest economic contractions in the region. In response, the Government has adopted an ambitious five-year program to support an inclusive recovery.** The program, adopted in August 2021, aims to achieve an annual average growth rate of at least 7 percent from 2021 to 2026 and eliminate extreme poverty.<sup>1</sup> Some of the policy proposals in the program include the phased introduction of Universal Health Coverage (UHC) starting in 2023, increasing capital expenditure, expanding coverage and better targeting of social assistance, and increasing pensions.<sup>2</sup>
- 2. How can fiscal policy support the implementation of the government's key policy proposals while ensuring the sustainability of public finances?** This is the main question for this Public Expenditure Review (PER).<sup>3</sup> To answer it, this PER will (i) analyze past fiscal performance; (ii) assess the medium-term fiscal impacts of selected policy proposals that are currently being considered such as increase in pensions, changes to social assistance, increased health expenditures, and increased capital expenditure; and (iii) propose options to improve spending efficiency in select areas to provide options for the government to use the available fiscal space to effectively implement these policy proposals.<sup>4</sup>
- 3. Ensuring fiscal sustainability is particularly important in an uncertain economic environment with elevated risks.** Downside risks to the economic outlook arise from global and regional factors, such as monetary tightening in advanced economies, a possible intensification of sanctions against Russia, and reversal of capital flows from Russia. Additionally, heightened security risks associated with the conflict with Azerbaijan continue to pose risks to the outlook and may impact the medium-term fiscal picture.

Fiscal performance has improved, supported by reforms, but spending efficiency remains weak

- 4. Armenia's fiscal performance over the past two decades has improved significantly.** Supported by tax policy and administration reforms, revenue collection has increased from 14.5 percent of GDP in 2002 to 23.3 percent of GDP in 2021, converging with income and regional peers. Spending levels have remained prudent and below regional and income averages. This has contributed to fiscal discipline, with deficits averaging 3 percent of GDP from 2010-2020, and in turn to debt sustainability, although a high share of foreign currency denominated debt remains a key vulnerability.

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<sup>1</sup> Programme of the Government of the Republic of Armenia, 2021-2026. <https://www.gov.am/files/docs/4629.pdf>

<sup>2</sup> This report uses the terms UHC as per its international definition and Universal Health Insurance (UHI) as used in Armenian policy documents interchangeably. This is discussed further in Chapter 4.

<sup>3</sup> The last comprehensive PER was conducted in 2014: World Bank Group. 2014. Republic of Armenia Public Expenditure Review: Expanding the Fiscal Envelope. Washington, DC: World Bank. <https://openknowledge.worldbank.org/handle/10986/21063>

<sup>4</sup> This PER does not analyze the impact of all policies proposed in the 2021-2026 government program. Some additional policy proposals such as on education will be examined in a follow-up PER.

5. **Improvements in fiscal performance have been supported by fiscal reforms undertaken in recent years.** This includes the upgrading of the fiscal rule in 2017 to allow for: a more counter-cyclical fiscal response; tax administration reforms such as the modernization of the State Revenue Committee (SRC); improvements in e-filing and automation of risk management functions; tax policy reforms, including major property tax reforms in 2020; and harmonization of annual budget and Medium-Term Expenditure Framework (MTEF) procedures since 2019.
6. **Fiscal policy has been counter-cyclical, progressive but has had a muted impact on stimulating growth.** The fiscal balance is negatively correlated with real GDP growth, but the degree of counter-cyclical is lower than among peers. Fiscal policy is progressive except for indirect taxes. This also contributes to poverty reduction – in 2017, fiscal policy was estimated to have contributed to a 3.8 percentage point reduction in poverty incidence – and to reducing inequality, but to a lesser degree than among peers. In contrast, fiscal policy has not been effective at stimulating short-run growth, as evidenced by small and statistically insignificant aggregate spending multipliers, with a small-to-medium positive capital spending multiplier and a small negative current spending multiplier.<sup>5</sup>
7. **The key area for concern is weak spending efficiency.**<sup>6</sup> Expenditure efficiency in areas such as infrastructure, road transport, health, and education are significantly behind the efficiency frontier. For example, in health, the report highlights that if spending was more efficient, Armenia could be spending AMD 0.6 billion (0.01 percent of 2018 GDP) less to achieve the same adult mortality outcomes and AMD 3.5 billion less (0.06 percent of 2018 GDP) to achieve the same under-five mortality outcomes.<sup>7</sup>

Policy proposals raise debt sustainability concerns in the event of an economic shock

8. **The PER analyzes the fiscal impact of selected policy proposals and highlights the options and trade-offs to manage rising spending pressures.** This report focuses on the following policy proposals, while assuming other spending and parameters are kept constant: (i) implementing increases in pensions; (2) increasing the coverage and improving the targeting of social assistance spending; (3) increasing capital expenditure, and (4) increasing health expenditures. ES Table 1 highlights the additional spending needs (around 3 percentage points of GDP by 2026) associated with these proposals compared to a no reform scenario. .<sup>8</sup>

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<sup>5</sup> Fiscal multipliers are generally defined as the ratio of change in output to a discretionary change in government tax revenue. From the literature, first-year multipliers between 0.1-0.3 are considered “small,” between 0.4-0.6 “medium,” and 0.7-1.0 “large.”

<sup>6</sup> In this report, public sector spending efficiency is examined by looking at the distance between observed input-output combinations and an efficiency frontier estimated by means of the Data Envelopment Analysis technique (DEA). This follows the methodology highlighted in the following report: Herrera and Ouedraogo. 2018. Efficiency of Public Spending in Education, Health, and Infrastructure: An International Benchmarking Exercise. Washington DC: World Bank.

<sup>7</sup> Chukwuma, A., et al. 2021. More money for health: Resource mobilization for Universal Health Coverage in Armenia. Washington, DC: World Bank.

<sup>8</sup> The fiscal impact assessment does not model a capital spending increase beyond the already ambitious increase in capital spending assumed in the MTEF..

- 9. The overall fiscal impact of this additional spending is assessed under baseline and economic shock scenarios.** The scenarios modeled include: (i) a favorable economic environment (baseline);<sup>9</sup> (ii) a shock scenario where the economy faces a growth and exchange rate shock (macro shock) to reflect the potential downside risks to the economic outlook; and (iii) a shock scenario with additional revenue and spending reforms.<sup>10</sup>
- 10. The key finding is that if the Government implements these policy proposals, debt is projected to breach the statutory threshold in the event of an economic shock.** In the baseline scenario, expenditure is projected to increase by 3.8 percentage points of GDP between 2022 and 2026<sup>11</sup>. In the macro-shock scenario, expenditure as a share of GDP is projected to increase by 7.5 percentage points of GDP over the same period driven by a contraction in GDP. Increased expenditures in turn are expected to lead to a sharp increase in the fiscal deficit: in the baseline doubling from 2022 to reach 5.3 percent of GDP by 2026, and in a shock scenario reaching 9.4 percent of GDP. Rising deficits will translate to increased debt. In the shock scenario, debt is projected to breach the statutory threshold of 60 percent of GDP by 2026. Additionally, interest payments are projected to increase to almost 20 percent of total spending from 11 percent of total spending in 2022.

Budgetary cuts may be necessary to ensure debt sustainability in the event of an economic shock

- 11. Delivering policy priorities in the medium-term will require challenging decisions and tradeoffs on spending, taxes, and debt.** Articulating a clear set of policy priorities and undertaking rigorous costing of these priorities is the first step. Next, if the priorities require a permanently higher level of spending, the government must look at the implications this will have on deficit and debt dynamics. Finally, higher spending will need to come from a combination of: (i) additional revenue mobilization; (ii) additional debt financing; (iii) budgetary cuts in other areas; and (iv) improving efficiency in public spending to generate savings.
- 12. More ambitious revenue reforms are unlikely to be sufficient to bring debt below the statutory threshold in the event of an economic shock.** On the taxation side, the PER assumes that while building on a successful track record on tax policy and administration reforms, Armenia can generate an additional 1.7 percent of GDP in revenue by 2026 by implementing more ambitious reforms than currently envisioned in the MTEF 2023-2025).<sup>12</sup> This will be insufficient to ensure

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<sup>9</sup> The baseline scenario uses the MTEF 2023-2025 approved in July 2022 as the benchmark, as this was the latest framework available at the time of preparation of the report. The analysis looks to avoid double counting of spending for the policy proposals. However, minor double counting could not be avoided due to unavailability of the detailed expenses under social protection programs in the MTEF 2023-2025 at the time of analysis.

<sup>10</sup> In the shock scenario, real GDP growth is reduced by 1 standard deviation for two consecutive years, and there are accompanying shocks to the interest rate and the exchange rate.

<sup>11</sup> 3 percentage points of GDP is due to the direct spending needs associated with the policies, and 0.8 percentage points of GDP is due to rising financing costs.

<sup>12</sup> The reforms included in the MTEF are (i) rationalization of “nontargeted or ineffective tax privileges” (tax expenditures); (ii) reforms of businesses taxes (profit taxes, turnover taxes, and taxation of small and medium enterprises) that aim to ensure “a fair and equal distribution of tax burden” and to reduce tax avoidance and

that debt falls below the statutory threshold by 2026. Even more ambitious taxation reforms could raise revenues further, but these reforms are unlikely to be feasible in the event of a shock given the significant additional burden on firms and households. Additional debt financing is not feasible in the event of a shock since, as noted above, debt is projected to breach statutory thresholds of 60 percent of GDP and interest payments are projected to increase significantly.

**13. This implies that budgetary cuts or a downgrading of policy ambition may be necessary to ensure debt sustainability in the event of an economic shock.** Budgetary cuts may need to come from other areas of spending or from a downgrading of ambition on the policy proposals under the 2021-2026 government plan. This necessarily implies difficult spending choices, which are made more challenging by high budget rigidity. On average, between 2018 and 2021, 73.2 percent of the budget went on spending areas assessed as “high” rigidity compared to 43.1 percent for the ECA average. This implies that spending cuts will likely be concentrated in less rigid spending categories, which includes capital expenditures. This in turn could have an impact on short-run economic output (as capital spending has the highest output multiplier), hindering recovery from the economic shock.

Increasing spending efficiency can provide an additional cushion in the event of a shock and is the focus of this PER

**14. Raising spending efficiency is a key challenge for fiscal policy, and increasing spending efficiency early will help provide an additional cushion in the event of a shock.** ES Table 2 highlights some efficiency savings (0.5 percent of GDP by 2026) associated with increased spending efficiency in policy areas studied in this report. These savings alone will not be sufficient to bring debt below the statutory threshold if policy proposals are implemented, but they can provide an additional cushion, thus easing some of the difficult spending choices. Additional efficiency savings in areas beyond the coverage of this review (such as in education and roads) will need to be identified through targeted spending reviews.<sup>13</sup>

**15. This PER focuses on policy recommendations to improve spending efficiency in selected areas:** improving the efficiency of capital spending such that it more effectively supports growth (Chapter 2); improving the efficiency and effectiveness of social protection spending (Chapter 3); and improving the efficiency and equity of health spending (Chapter 4).<sup>14</sup> These areas were selected as they correspond to key policy priorities under the government program, and in the

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evasion through practices such as firm-splitting, under-reporting, and fake invoices; and (iii) phasing out the withholding of VAT on the border for imported goods to help support businesses’ cashflow. The more ambitious tax reforms modeled include: further efforts to close policy gaps (e.g., by further reducing the threshold for turnover taxes and reducing exemptions); tackling administrative gaps (e.g., by lowering the burden of paying taxes and strengthening compliance management); and increasing excises for sugar-sweetened beverages at a faster than highlighted in the current MTEF.

<sup>13</sup> This is the first PER in a programmatic series, and other spending areas (such as education) may be covered in subsequent reviews.

<sup>14</sup> A social assistance program is considered efficient when: (i) it achieves the outcomes at a low unit cost (benchmarked against other programs in the country or against similar programs in other countries), or (ii) most of its funds reach the target group as defined by the program objectives. A social assistance program is considered effective when (i) it achieves the desired outcomes, or (ii) it ensures a high coverage of the intended target group, and adequate benefits.

case of social protection as this accounts for the largest share of government spending after defense. The key findings from each of these chapters are highlighted below and the recommendations summarized in ES Table 3.

- 16. Improving spending efficiency in these areas could generate positive complementary impacts over the long term.** For example, improving the efficiency of capital spending could help support growth in the medium to longer term by improving the corresponding spending multiplier. Improved growth outcomes could in turn positively impact revenue mobilization and increase the fiscal space available for implementing the government's policy program. An additional example is the impact of improving the efficiency and equity of health spending. This could help lower overall healthcare costs and out-of-pocket health expenses, which are a major spending item for poorer households. The welfare gains associated with improved health spending efficiency could in turn allow the government to consider a more gradual increase in pensions.

## Chapter 2: Improving the efficiency of capital spending

- 17. Stagnant capital spending has contributed to declining public capital stock, which together with inefficiencies in spending is likely hindering economic growth.** Public capital expenditures have remained stagnant at around 3.5 percent of GDP over the last decade, with evidence of limited and not well-prioritized spending on maintenance. This has contributed to a decline in the public capital stock. However, simply increasing capital spending is not sufficient to increase the capital stock and support economic growth. Capital expenditures will need to be allocated and implemented more efficiently and Public Investment Management (PIM) processes reforms put in place to ensure capital expenditure efficiency.
- 18. The analysis of expenditure efficiency and project implementation is hindered by critical data gaps** such as lack of availability of disaggregated data on maintenance spending, lack of project codes for domestic projects, and incomplete public asset registers. Thus, ***the report recommends that*** Armenia improve data on capital spending to enable evidence-based decision making. This includes collecting data on maintenance spending, updating asset registries, reporting operations and maintenance (O&M) and investment costs for each project in a consolidated manner, reporting projects in a multi-year perspective, and utilizing cloud-based capabilities to help identify infrastructure gaps.
- 19. Key upstream Public Investment Management (PIM) processes of strategic planning and budgeting are constrained** by the absence of key sector plans, insufficient costing, and weak integration of plans with the budget. Thus, ***the report recommends that*** Armenia strengthens strategic planning and budgeting of capital expenditures. Short-term recommendations include building a pipeline of appraised and costed projects following the prioritization process highlighted in the 2023 PIM decree. Medium- to longer-term recommendations include costing sector strategies, ensuring a review of costing by the Ministry of Finance (MoF) to ensure realism, and strengthening strategic planning by implementing recommendations from the ongoing functional review.
- 20. Critical data gaps and an inefficient monitoring framework hinder an analysis of the performance of domestically financed capital projects, while large foreign-financed capital projects are facing implementation delays.** Thus, ***the report recommends that*** Armenia improve project monitoring and addressing key project implementation constraints. Short-term recommendations include introducing a digital register of capital projects with unique identifying

codes and conducting in-depth assessment of the specific implementation bottlenecks of the largest stalled projects. Longer-term recommendations include developing a system of systematic portfolio monitoring, with institutional mechanisms and formalized data and information sharing between MoF and line ministries.

### Chapter 3: Improving the efficiency and effectiveness of social protection spending

- 21. Armenia has a relatively well-developed social protection (SP) system, resting on three pillars: social insurance (SI) measures, which include pensions; social assistance (SA) measures; and labor market (LM) measures.** The SP system has been reformed significantly in the last decade, particularly in pensions, with the introduction of a funded pension pillar. SP expenditures account for nearly a quarter of total government spending and have played a critical role in reducing poverty and inequality.
- 22. Armenia's pension system has been reformed recently but requires additional adjustments to ensure it is fiscally sustainable and socially adequate.** The mandatory funded pension (Pillar II) became fully functional in July 2018, with a total contribution rate of 10 percent and initial contribution of 5 percent from the government.<sup>15</sup> Further significant changes to the other pillars of the pension system are envisioned under the 2021-2026 government program, particularly the increase in minimum pensions. Key challenges for the pension system include: (i) insufficient incentivizing of labor formalization and participation in the employment pension pillar, as minimum pensions are converging with labor plus basic pensions; and (ii) maintaining the adequacy of benefits, which requires ad-hoc changes to pension levels.
- 23. To address these challenges, the report recommends the following pensions reforms:** progressively phasing out the government contribution to Pillar 2; considering options to ensure that minimum pensions increase does not disincentivize labor market participation; and considering options (for example, indexing) to maintain adequacy of pension benefits, while ensuring fiscal sustainability.
- 24. Social assistance benefits perform well when compared with peers, but there are opportunities to improve targeting and reduce the fragmentation of the system.** The SA system relies mostly on five large programs, which account for nearly 80 percent of all SA benefits. The system performs at par with peer countries in terms of coverage and targeting. In the absence of any social protection benefits and if households were unable to compensate from other sources of income, half of Armenians would live in poverty (up from the current one quarter of the population), and inequality would increase by 40 percent. Key challenges for social assistance include: (i) the need to improve targeting, including for large programs such as the Family Benefit Program (FBP), as one-third of the funds goes to the non-poor and over half of the poor remain excluded from social assistance; and (ii) the existence of several small SA programs, with over 50 small programs accounting for about 20 percent of spending on social assistance benefits and services, which suggests opportunities for further prioritization and consolidation. ***The report recommends the following reforms to improve social assistance:*** rolling out the new vulnerability assessment system for the targeting of benefits; strengthening implementation of the Family Benefit Program (e.g., by investing in information systems); investing in reducing error and fraud;

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<sup>15</sup> Contributions are limited to 0.8 percent of GDP

and rationalizing less cost-effective SA benefits (for example, considering the option of keeping the nominal levels of the Child Birth Grant constant over the medium-term).

- 25. Saddled with low labor market participation and high long-term unemployment, Armenia lags most of its comparator countries with respect to the effectiveness of its LM measures.** Public Employment Services (PES) only reach a small share of the unemployed, with limited evidence of its effectiveness in terms of improving employment outcomes. While the financing of Active Labor Market Measures (ALMMs) is limited, underspending of allocated funds is common and operating costs are high. *The report recommends the following reforms to improve the efficiency of labor market measures:* prioritizing target groups (youth, women, newly unemployed and specific groups of long-term unemployed); consolidating services in a limited number of flagship programs; improving targeting with more differentiated regional funding and program selection; and improving the monitoring of results.

#### Chapter 4: Improving the efficiency and equity of health spending

- 26. Since independence, Armenia has undertaken significant health reforms and achieved gains, but the system needs to evolve with changing health needs.** Armenia has been successful in rationalizing resource use by reducing its hospital capacity and non-medical staffing. These improvements are also reflected in significant improvements in population health outcomes, with life expectancy increasing from 72 years in 2000 to 76 years in 2019, the highest among Commonwealth of Independent States (CIS) countries. However, the country now faces a growing burden from non-communicable diseases (NCDs) and has an aging population. The health system is not currently geared to respond to these challenges, with concerns regarding financing, service delivery, and governance of the health sector.<sup>16</sup>
- 27. To meet evolving the population's health needs and to improve access to healthcare, the government is committed to undertaking the most significant reform effort in three decades to move towards achieving UHC.** This report highlights the major spending inefficiencies in the health sector and proposes governance and financing reforms that could inform this move towards UHC.<sup>17</sup> The *key recommendation with respect to UHC rollout* is to ensure that it is preceded by a careful assessment of the reform to minimize its potential fiscal implications, which could be significant.
- 28. Armenia's health sector financing is dominated by private Out-of-Pocket (OOP) spending, which raises equity concerns.** The burden of financing health care lies primarily with Armenian households (around 85 percent of total health expenditure in 2019), with negative implications for financial protection and equity. Moreover, funding flows are fragmented, preventing the pooling of risks and leading to information asymmetry. To address this challenge, *the report recommends* that Armenia consider a gradual increase in the public health budget in line with the available fiscal space and consider merging state funding for different services.

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<sup>16</sup> This report focuses on governance and financing related challenges. Service delivery challenges are also important but are covered in complementary World Bank reports. This is discussed further in Chapter 4.

<sup>17</sup> The report does not aim to provide a comprehensive review of the UHC reform. Notably, it does not include a costing of the reform. It also does not discuss the reforms needed to improve service delivery.

- 29. Turning to efficiency of public spending, non-strategic purchasing of health supplies and services is a significant source of inefficiency.** This creates additional costs and lost opportunities to cross-subsidize financial risk. Non-strategic purchasing is driven by the weak purchasing function of the State Health Agency (SHA), non-optimal design of health benefits, and a suboptimal payment mix. ***The report recommends moving towards more strategic purchasing by:*** establishing a single strategic purchaser for state-funded care, with mechanisms to ensure accountability, and instituting a mechanism to govern the revision of the benefits package, in a systematic and consultative manner.
- 30. Health services in Armenia remain hospital-centric, which is inefficient.** While Armenians enjoy excellent physical access to Primary Health Care (PHC) facilities, PHC usage remains low, driven by concerns over quality and additional costs. This results in unnecessary hospital and emergency care use. Addressing this requires service delivery reforms to improve PHC quality (covered in other WB reports) and financing reforms. ***From a financing perspective, this report recommends that*** Armenia implement payment reforms to reward quality of PHC services. This entails establishing a mechanism for periodically reviewing the levels of reimbursement to ensure that they reflect the cost of providing services.
- 31. Pharmaceutical spending is high, which is a driver of high OOP and inefficiency in public health spending.** About 30 percent of total health spending in Armenia is on medicines and medical supplies, which is high compared to other Upper Middle-Income Countries (UMICs). This is driven by several factors. Firstly, retail prices are relatively high due in part to high import prices and high wholesale and retail markups. This reflects weak regulation and oversight over medicine prices and weak competition in the import, wholesale, and retail pharmaceutical markets. Secondly, physician prescribing practices tend to favor more expensive brand-name medicines rather than generic alternatives. Thirdly, inefficient procurement practices such as fragmented procurement across facilities drive higher prices, with significant variance across inpatient and outpatient facilities. ***The report recommends that Armenia consider:*** centralizing the procurement of commonly purchased medicines and medical supplies, using external reference pricing, revisiting the VAT rate for medicines, and implementing prescribing budgets.

**ES Table 1: Estimated additional spending needs to implement selected policy proposals. Percent of GDP**

	2023	2024	2025	2026
<b>Social Protection</b>				
Increase minimum pension to the minimum food basket (MFB) value <sup>18</sup>	0.00	0.35	0.75	1.17
Changes to the Family Living Standards Enhancement Benefit (FLSEB) <sup>19</sup>	0.00	0.09	0.09	0.08
Expansion of childcare allowance for children under 2 to make it universal	0.05	0.05	0.06	0.06
<b>Health</b>				
Increase spending to reach UMIC average by 2026	–	0.50	1.00	1.70
<b>TOTAL</b>	<b>0.05</b>	<b>0.99</b>	<b>1.90</b>	<b>3.01</b>

**ES Table 2: Potential additional savings (efficiency gains) associated with selected policy reforms. Percent of GDP**

	2023	2024	2025	2026
<b>Social Protection</b>				
Phase out of contributions to Pension Pillar 2. Government contribution decreases from 47% in 2022 to 40% in 2026 (worker contributions increase from 53% to 60%). <sup>20</sup>	0.07	0.07	0.08	0.11
Freeze of childbirth grant levels at current nominal level	0.00	0.04	0.04	0.05
Consolidation of other SA programs and introducing income test for childcare allowance	0.00	0.05	0.05	0.04
<b>Health</b>				
Efficiency gains from implementing reforms to control pharmaceutical prices and reducing the reliance on hospital care	–	0.10	0.20	0.30
<b>TOTAL</b>	<b>0.07</b>	<b>0.26</b>	<b>0.37</b>	<b>0.50</b>

<sup>18</sup> The counter-factual is to freeze the minimum pension to the 2023 value (about 90% of the MFB in 2023) in real terms (adjusted for inflation). The key assumption underlying the projection is that the relationship between minimum, basic, and labor pensions remains the same.

<sup>19</sup> These include: (i) eligibility threshold equal to the minimum food basket; (ii) benefit value proportional with the difference between the eligibility threshold and disposable incomes; and (iii) improved targeting performance and coverage of the poor.

<sup>20</sup> The counter-factual is that contribution shares stay the same as in 2022: government contribution 47 percent and worker contribution 53 percent.

**ES Table 3: Summary of Policy Recommendations**

Policy Area	Short Term	Medium to Longer Term
<b>Chapter 2: Improving Capital Expenditure Efficiency</b>		
<i>Improve data on capital spending to enable evidence-based decision making</i>	<ul style="list-style-type: none"> <li>Collect data on maintenance spending by project</li> </ul>	<ul style="list-style-type: none"> <li>Update asset registry across sectors</li> <li>Improve reporting on public capital expenditure execution: present projects in multi-year and report O&amp;M costs by project</li> <li>Complement execution data with cloud-based capabilities</li> </ul>
<i>Strengthen Strategic Planning and Budgeting</i>	<ul style="list-style-type: none"> <li>Gradually implement the prioritization outlined in new PIM decree to build appraised project pipeline</li> <li>Improve performance orientation of action plan for 2021-26 government program</li> </ul>	<ul style="list-style-type: none"> <li>Cost all sector strategies, with costing reviewed by MoF to ensure realism</li> <li>Consider recommendations of ongoing functional review of strategic planning</li> </ul>
<i>Improve project monitoring and implementation</i>	<ul style="list-style-type: none"> <li>Introduce digital project cadaster with identifying codes</li> <li>Focus on analysis of largest stalled projects</li> </ul>	<ul style="list-style-type: none"> <li>Develop system of systematic project portfolio monitoring, with formalized information sharing on project progress between MoF and line ministries.</li> </ul>
<b>Chapter 3: Improving Social Protection Expenditure Efficiency</b>		
<i>Increase affordability and improve spending efficiency</i>	<ul style="list-style-type: none"> <li><i>Pensions:</i> Phase out government contribution to Pillar 2 (at least 1 percentage point every ten years).</li> <li><i>Social Assistance:</i> Freeze the benefit levels (in nominal terms) of the Childbirth grant</li> <li><i>Labor Market Measures:</i> Define priority target groups and discontinue measures that are ineffective</li> <li><i>Labor Market Measures:</i> Revisit the regional funding allocation formula</li> </ul>	<ul style="list-style-type: none"> <li><i>Pensions:</i> Harmonize basic and labor pensions increases with the minimum pension increase proposed under the 2021-26 government program</li> <li><i>Social Assistance:</i> Pilot and implement the Vulnerability Assessment System reform.</li> <li><i>Social Assistance:</i> Introduce a simple, automated, affluence test for the Childcare Allowance for Children under 2, using a generous threshold (covering the bottom 2 or 3 quintiles)</li> <li><i>Social Assistance:</i> Review and evaluate small programs and phase-out or consolidate the ineffective ones.</li> </ul>
<i>Invest to improve administrative efficiency</i>	<ul style="list-style-type: none"> <li><i>Social Assistance:</i> Introduce a social inspection unit to address error and fraud</li> <li><i>Labor Market Measures:</i> Digitize and standardize data records for all ALMMs, and use job counselors (NES staff) more efficiently</li> </ul>	<ul style="list-style-type: none"> <li><i>Social Assistance:</i> Introduce an integrated information system to allow interoperability and integration of Vulnerability Assessment System (VAS) with other government systems and databases</li> </ul>
<b>Chapter 4: Improve efficiency of health spending</b>		
<i>Gradually implement Universal Health Care</i>	<ul style="list-style-type: none"> <li>Ensure reform rollout is preceded by a clear understanding of the operational details,</li> </ul>	<ul style="list-style-type: none"> <li>Adopt parallel reforms to address the constraints to health spending efficiency that have been identified in this report.</li> </ul>

<i>Reform, while taking into account fiscal implications</i>	estimate of the cost and its financing arrangements	
<i>Gradually increase public, prepaid, and pooled financing for health</i>	<ul style="list-style-type: none"> <li>Adopt a gradual increase in the public health budget, in line with the available fiscal space.</li> </ul>	<ul style="list-style-type: none"> <li>Consolidate state funding for services that cover the beneficiaries of the social package, the general population, and vulnerable and special groups.</li> </ul>
<i>Establish independent and accountable agency empowered to undertake strategic purchasing decisions</i>	<ul style="list-style-type: none"> <li>Establish a single payer to purchase state-funded care with defined clear roles and responsibilities including the ability to tailor contracting mechanisms within subnational units and across providers.</li> </ul>	<ul style="list-style-type: none"> <li>Agency should be independent of the MoH but remain accountable to the MoH, MoF, and other key stakeholders. The agency should be subject to audits and annual performance reporting</li> </ul>
<i>Introduce mechanism to govern revision of the benefits package</i>		<ul style="list-style-type: none"> <li>Put in place a system of technical assessments and comprehensive stakeholder consultations for revision of the benefits package, such that decisions include considerations for the burden of disease and financial risk protection which will improve allocative efficiency within the BBP.</li> </ul>
<i>Reform payment systems</i>		<ul style="list-style-type: none"> <li>Establish a mechanism for periodically reviewing the levels of reimbursement to ensure that they adequately reflect the cost of producing these services to promote the quality, increase primary care supply, rationalize the use of hospital care and reduce incentives for undersupply and balance billing.</li> <li>Invest in adapting the electronic health information system to support monitoring, reimbursement, and grievance redress.</li> </ul>
<i>Introduce pharmaceutical policies to reduce medicine prices</i>	<ul style="list-style-type: none"> <li>Consider revising the VAT rate on medicines to bring in line with regional peers</li> </ul>	<ul style="list-style-type: none"> <li>Centralize procurement of commonly purchased medicines and medical supplies at the primary and hospital level. Improve the transparency of the market by proactively sharing information on suppliers and prices of specified products.</li> <li>Consider using external reference pricing, which will make the maximum price paid for medicines comparable to similar countries and health systems.</li> <li>Implement prescribing budgets, such as a yearly cap on spending on medicines in the essential list.</li> </ul>

# **Chapter 1: Macro-Fiscal Policy**

## Chapter 1: Macro-fiscal policy

### Section 1.1: Introduction

- 32. Following twin crises in 2020, Armenia has enacted an ambitious agenda for an inclusive recovery, as reflected in the Program of the Government of the Republic of Armenia (2021–2026).**<sup>21</sup> The program is underpinned by the key goals of achieving annual GDP growth of 7 percent, total factor productivity growth of 5 percent, and reducing the unemployment rate of between 17 and 18 percent to 10 percent over the five-year period. Key policy proposals in the program include a commitment to introducing a comprehensive health insurance system, increasing capital expenditure, expanding existing social assistance programs, and increasing pensions.
- 33. How can fiscal policy support the implementation of key policy proposals under the government program while ensuring the sustainability of public finances?** *This is the key question that will be answered in this PER, with this chapter providing the overall framework for the report.* The chapter is structured as follows: Section 1.2 assesses past fiscal performance, highlighting relative strengths and weaknesses. Section 1.3 models the medium-term fiscal impacts, mostly beyond what is envisioned in the 2023-2025 Medium Term Expenditure Framework (MTEF) of select policy proposals. The modeled policy proposals include increased social spending, including on pensions, and increased health spending.<sup>22</sup> Finally, Section 1.4 concludes with a summary of findings.

### Section 1.2: Past fiscal performance

- 34. This section evaluates Armenia’s fiscal performance over the past two decades by analyzing the evolution of key fiscal aggregates and the performance of fiscal policy in terms of supporting macroeconomic stability and short-run growth while reducing poverty and inequality.**
- 35. Looking at the evolution of fiscal aggregates, Armenia’s fiscal performance over the past two decades is characterized by impressive gains:** (i) revenue collection has increased significantly, albeit with some challenges remaining in terms of quality of revenue collection; (ii) spending levels have remained contained; and (iii) as a result, fiscal deficits have remained in check, which has contributed to macroeconomic stability and debt sustainability. These gains have been supported by fiscal reforms, particularly in recent years (Box 1).

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<sup>21</sup> The program is available at: <https://www.gov.am/files/docs/4737.pdf>.

<sup>22</sup> The chapter does not consider a scenario for additional capital expenditure as the MTEF already programs a significant increase.

**Box 1: Fiscal Reforms undertaken in Armenia in recent years**

**Armenia has undertaken significant fiscal reforms in recent years, which has helped improve fiscal performance.** These include:

- Upgrading the fiscal rule in 2017 to make it more flexible and allow for more discretionary countercyclical policy. This included the introduction of escape clauses, which were used in 2020 during the economic crises.
- Adopting a unified Tax Code at the end of 2016, which became effective in January 2018. The unified code streamlined and simplified various tax laws, some of which were previously contradictory. This has helped improve the efficiency of the tax system and reduce the administrative burden of taxation.
- Significant tax policy reforms have also been undertaken. This includes lowering the profit tax rate from 20 percent to 18 percent and major property tax reform approved in 2020. The latter brings the cadastral value of properties to 80 percent of the market price on average, effective 2021 and to be implemented gradually through 2026. Armenia has also gradually increased excise rates for the main tobacco products and alcoholic beverages annually since 2019.
- Significant reforms have been undertaken in tax administration since 2018. The number of tax regimes has been lowered from five to three (regular regime, turnover tax regime, and micro-entrepreneurs). Other reforms have focused on the State Revenue Committee (SRC) and include: (1) strengthened strategic planning, including carrying out five-year strategy papers on administrative improvement programs that are updated annually; (2) streamlining and modernizing the structure of the SRC by unifying taxpayers service centers and consolidating tax inspectorates; and (3) improvements in electronic services system, such as electronic tax filing, online portal for managing customs procedures and duties, and automation of risk-management functions.
- Reforms in the VAT refund system released the growing significant stock of tax credits and removed the longstanding burden on export-oriented businesses and their cash flows. The Tax Code introduced a new unified account within the Treasury to enable it to receive tax cash collections, netting-out the VAT refund, and channeling the taxes that accrued in the reporting period to the state budget. This new initiative made it possible to refund or offset any overpaid VAT not only to exporters but also to other businesses within Armenia within a very short period.
- Starting 2019, the annual budget and Medium-Term Expenditure Framework (MTEF) processes have been more closely linked. At the time of MTEF approval by the government in early July, the draft of a detailed annual budget plan for the next year has also been approved by the government. This is reflected in better alignment of execution of capital expenditures with the medium-term plan (see Figure 32 for 2022).
- In 2021, a Public Investment Management (PIM) framework was formally institutionalized with the establishment of the Public Investment Department within the Ministry of Economy. This was the first milestone in systematizing upstream screening and appraisal processes and put in place a prioritization framework. Under the new PIM rules, all projects above a certain threshold (AMD 250 million, or about US\$0.6 million) are subject to a rigorous process of upstream preparation and evaluation. In February 2023, the PIM process was further strengthened by including climate change considerations in the screening process of projects.

**36. Fiscal policy has been counter-cyclical and progressive, but its role in supporting short-term growth in output has been muted.** Fiscal policy has helped dampen output volatility, but the degree of counter-cyclical is lower than in peer countries. Spending and taxes have been progressive, helping to reduce poverty and inequality, although the extent to which fiscal policy has contributed to reducing inequality has been lower than among peers. Fiscal policy has had a muted impact in terms of supporting short-run output growth, reflected in low and insignificant aggregate spending multipliers. The exception is capital spending, which has a small positive multiplier.

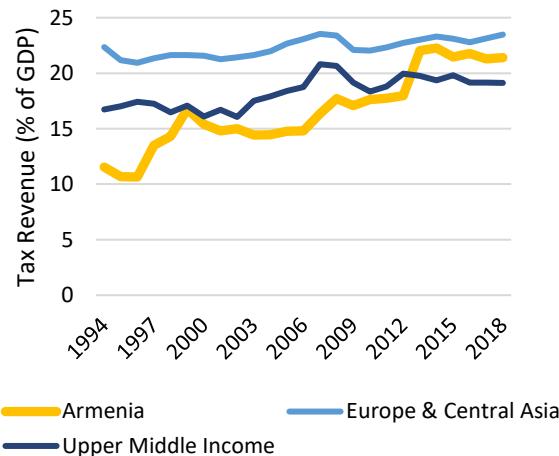
**37. The key area of concern is spending efficiency.** Spending efficiency in terms of converting inputs to outcomes is low in key sectors such as education, roads, and health (this will be discussed in depth in Chapter 2-4).

Section 1.2.1: Tax collection has improved significantly, although some concerns remain with the quality of revenue collection

**38. Armenia's revenue mobilization has improved significantly over the past two decades and converged with regional and income-group peers.** In 2002, Armenia collected just 14.5 percent of GDP in tax revenue, well below the average for Europe and Central Asia (ECA). Tax revenue as a share of GDP increased significantly to 23.3 percent in 2021, and Armenia had closed the tax/GDP ratio gap with ECA countries (Figure 1). This has been supported by tax policy and administration reforms, including: reform of income taxes and the profit tax (1999); introduction of codes of conduct and an internal audit unit (2001-2004); rollout of a new IT system and business process reform (2012); introduction of a new turnover regime for small businesses (2013); adoption of a unified Tax Code (2016); and property tax reform (2020-present).<sup>23</sup>

**39. Despite this significant improvement, tax collection in some areas such as VAT remains below its potential.** Looking at global tax aggregate data, Armenia collects higher revenues than would be expected given its level of income as measured by per capita GDP. Armenia performs well in terms of direct tax collections. Although revenue collected from taxing capital income is lower than peers, both corporate income tax (CIT) and personal income tax (PIT) have higher

**Figure 1. Tax revenues, Armenia vs peers.**  
Percent of GDP, 1994-2019



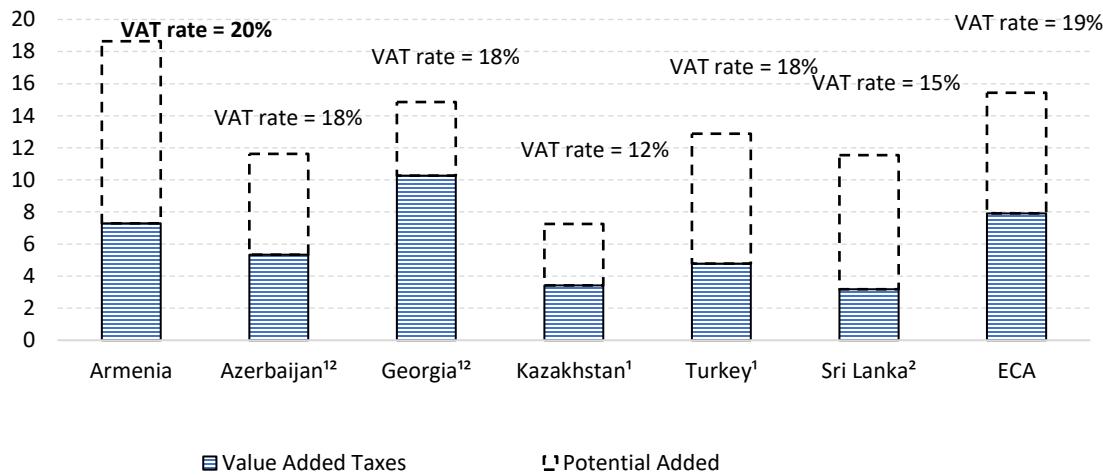
Source: World Bank analysis, data from ICTD and OECD, with some updates using government data provided to the World Bank

<sup>23</sup> The increased revenue also includes unification of social contribution with income tax since 2013.

productivity than among income and regional peers.<sup>24</sup> However, in indirect taxes, particularly VAT, Armenia has a significant tax gap. As of 2018, Armenia's estimated VAT gap stands at a substantial 60.9 percent (that is, it collected only 39.1 percent of the theoretical potential); this compares to an average VAT gap of 48.7 percent for the ECA region (Figure 2).<sup>25</sup>

**Figure 2. VAT and potential VAT in 2018.**

Percent of GDP



Source: World Bank analysis, data from International Center for Tax and Development (ICTD) and Organisation for Economic Cooperation and Development (OECD), with some updates using government data provided to the World Bank.

Note: 1. Neighbor; 2. Structural Peer

**40. The quality of taxation is just as important as collecting an adequate amount.** Taxation quality refers to the extent to which taxation minimizes distortions in growth and the extent to which taxes are leveraged to correct negative externalities in the economy. An important way taxes can distort economic activity is if the effective burden is highly uneven across sectors, types of economic activity, and/or business types. For example, if manufacturing is effectively taxed higher than services, economic agents may be encouraged to channel more resources into services not because they are economically more profitable pre-tax but so that they can benefit from the tax advantage.

**41. Analysis conducted by the Ministry of Finance reveals wide differences in effective tax rates by sector within the profit tax and the turnover tax regimes (Figure 3).** Sectors that enjoy a much lower profit Effective Tax Rate (ETR) include the arts and entertainment, agriculture, accommodation and food services, and water and waste management sectors. In contrast, transport, professional services, and real estate face higher profit tax ETRs. Similarly, the ETR for the turnover regime varies significantly, with the highest ETRs prevalent in the arts and entertainment and the real estate sectors. Meanwhile, extraterritorial organizations and bodies

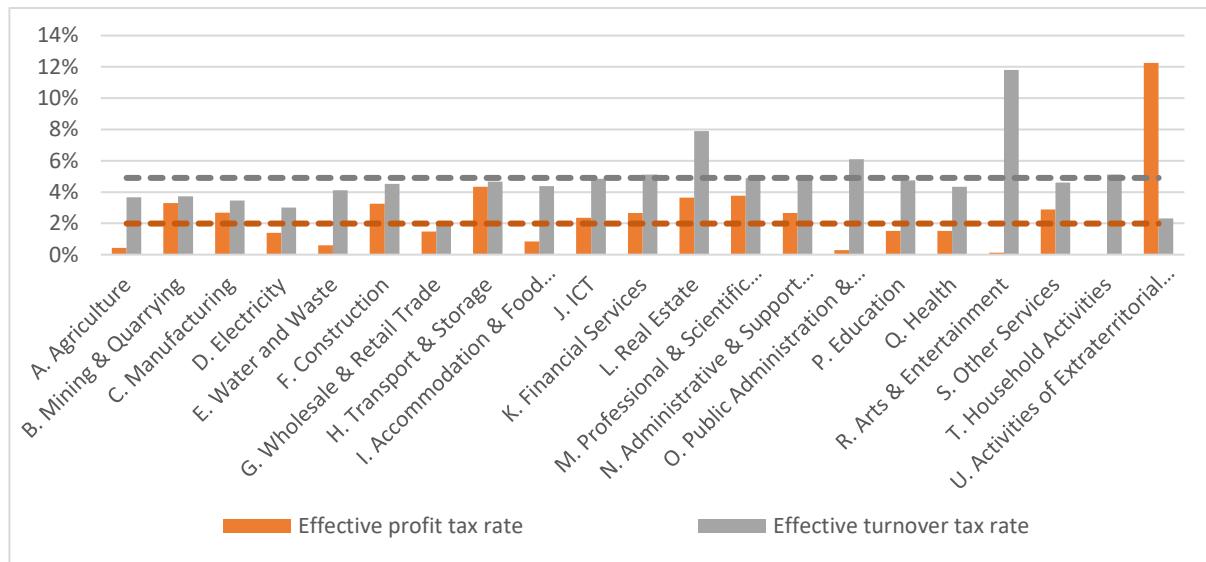
<sup>24</sup> Productivity compares the amount of revenue collected with the highest rate that exists in the country's tax system. Higher productivity indicates that the tax system is efficiently collecting what is due and indicates – but does not conclusively establish – a lower tax gap.

<sup>25</sup> The VAT gap consists of the difference between VAT potential and actual collection. Potential is estimated using stochastic frontier analysis, considering GDP and openness of trade.

face by far the highest profit tax ETR, or an average of 12.3 percent compared to an average for all other sectors of just 2.0 percent.

**Figure 3. Effective Tax Rates: The Profit Tax and the Turnover Tax (by Sector).**

Percent

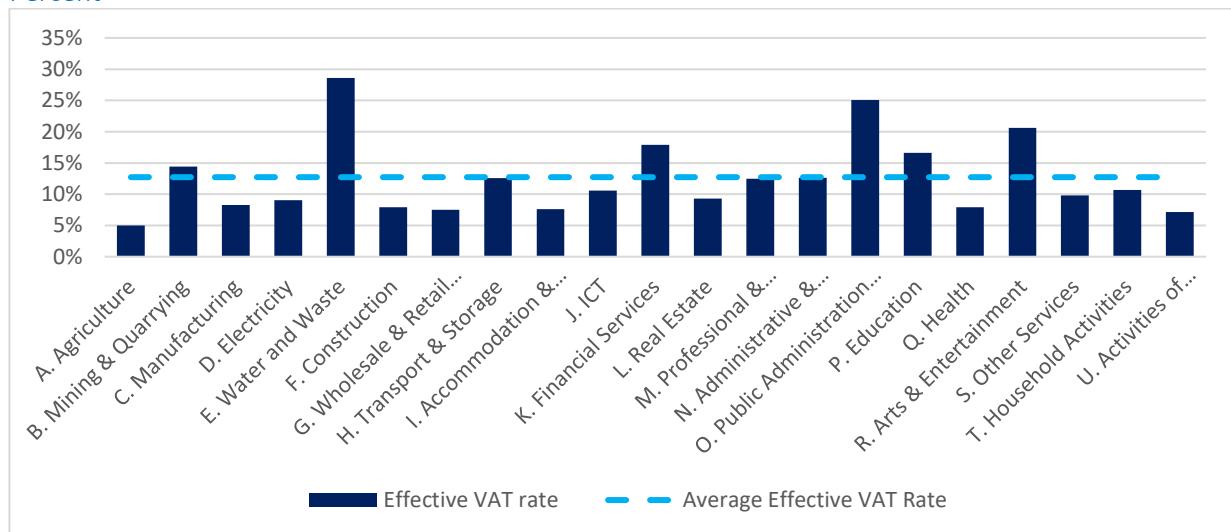


Source: Ministry of Finance, authors' analysis

**42. Effective tax rates also vary widely within VAT, which potentially distorts consumers' purchasing behavior of different goods and services** (Figure 4). Water and waste services and entertainment are among the sectors with higher VAT ETRs, while agriculture, wholesale and retail trade, and construction are some of the sectors with the lowest VAT ETRs.

**Figure 4. Effective Tax Rates: The Value-Added Tax (By Sector).**

Percent

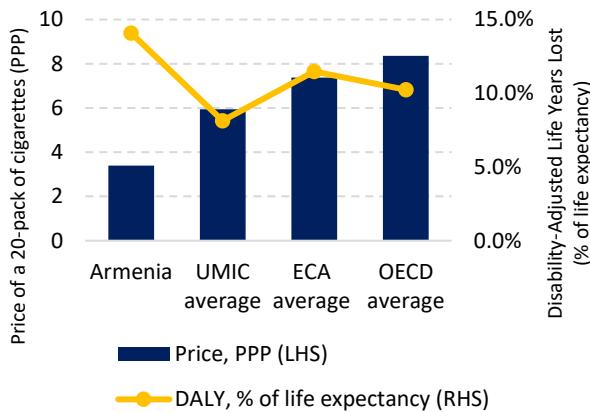


Source: Ministry of Finance, authors' analysis

**43. Armenia could also better leverage its tax system to tackle other market failures in the economy, including on health and the environment, to yield a “triple dividend.”** In 2018, the

price of a 20-cigarette pack of the best-selling brand (adjusted for purchasing power parity) in Armenia was just USD 3.40, less than half the average price of USD 7.40 in the ECA region. As a result of cheap tobacco, disability-adjusted life-years lost to tobacco-related diseases as a percentage of life expectancy was substantially higher in Armenia, at 14.1 percent, than the average for ECA or the OECD (11.5 and 10.2 percent, respectively) (Figure 5). Similarly, environmental taxation is very weak in Armenia. Examples of environmental taxes include taxes on energy products, motor vehicles and transport services, ozone depleting substances, and water pollution. While data from neighboring countries are not widely available, comparison with Turkey and the OECD shows that Armenia's revenue from environmental taxation is substantially lower (Figure 6). Shortcomings in leveraging health and environmental taxes means that Armenia is missing out on a triple dividend: higher revenue from more robust taxation; lower expenditures on diseases/climate due to better preventative measures; and higher labor productivity and welfare due to the benefits of fewer sick days, longer-life spans, less polluted air, land and sea, and other well-documented co-benefits.<sup>26</sup>

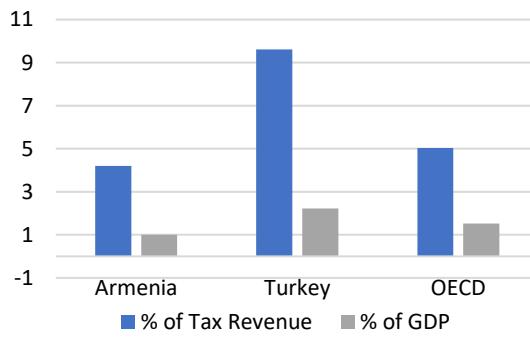
**Figure 5. Price of Tobacco and Disability-Adjusted Life Years Lost from Tobacco Diseases**



Source: Data from The Tobacco Atlas; authors' analysis

**Figure 6. Environmental Taxation.**

Percentage of GDP and Percent of tax revenue



Source: Data from ICTD and OECD, with some updates using government data provided to World Bank; authors' analysis

#### Section 1.2.2: Spending levels have remained contained, with significant deviations in budget versus actuals for capital expenditures

**44. Public spending in Armenia has remained contained, at levels lower than regional and income averages.** Overall spending averaged close to 27 percent of GDP from 2016-2021, as compared to the regional average of 30 percent.<sup>27</sup> Armenia spends less on functions such as education, health, and general public services when compared to peers (Panel 1). Spending on defense and public order and safety are the only functions of government for which Armenia's spending is at the level

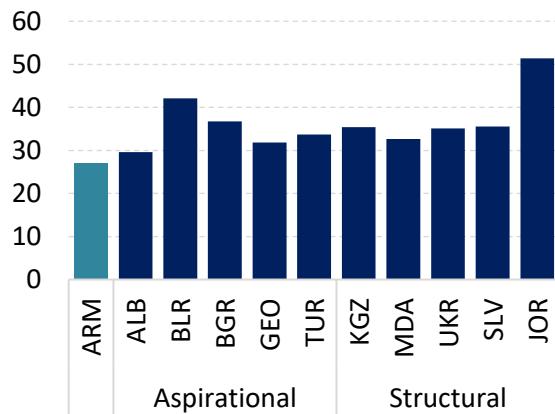
<sup>26</sup> See: Pigato, M., ed. 2019. Fiscal Policies for Climate Action. Washington, DC: World Bank; T. Tanner et al. 2018. The Triple Dividend of Resilience. Washington, DC: World Bank; and World Bank. Economics of Tobacco Toolkit, available at: <https://www.worldbank.org/en/topic/health/publication/economics-of-tobacco-toolkit>.

<sup>27</sup> Note that driven by the impact of the twin crises of 2020, spending picked up significantly in 2020 (to 31.1 percent of GDP) before reducing marginally in 2021 (29.5 percent of GDP).

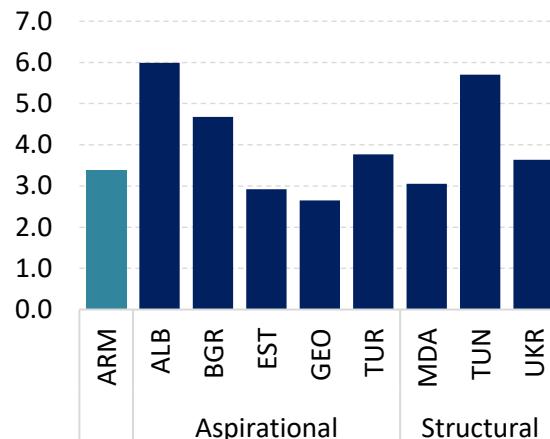
of regional and income averages. Annex 1.1 includes a cross-tabulation by function and economic classification.

#### Panel 1: Expenditures as percent of GDP

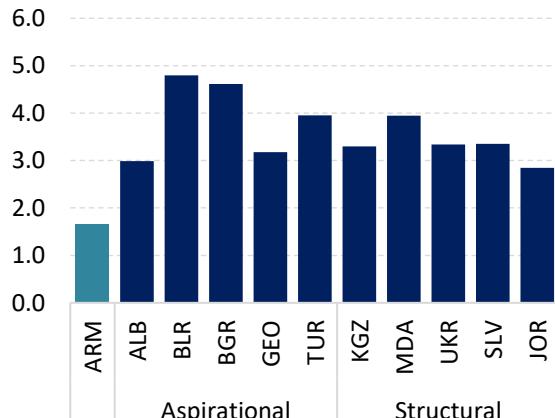
**Panel 1, Figure I. Total Expenditure. Percent of GDP (2016–2021 Average)**



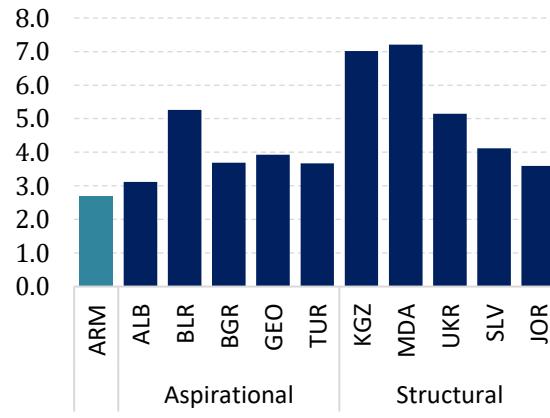
**Panel 1, Figure II. Capital Expenditure. Percent of GDP (2016–2021 Average)**



**Panel 1, Figure III. Health Expenditure. Percent of GDP (2016–2021 Average)**



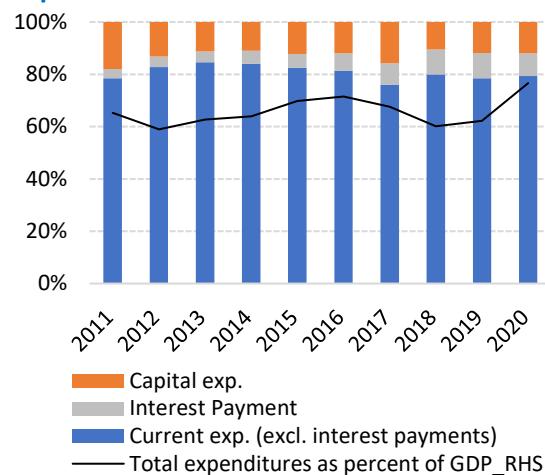
**Panel 1, Figure IV. Education Expenditure. Percent of GDP (2016–2021 Average)**



Source: Data from ministries of finance; World Bank BOOST database; World Bank Expenditure Dashboard (2023); authors' analysis

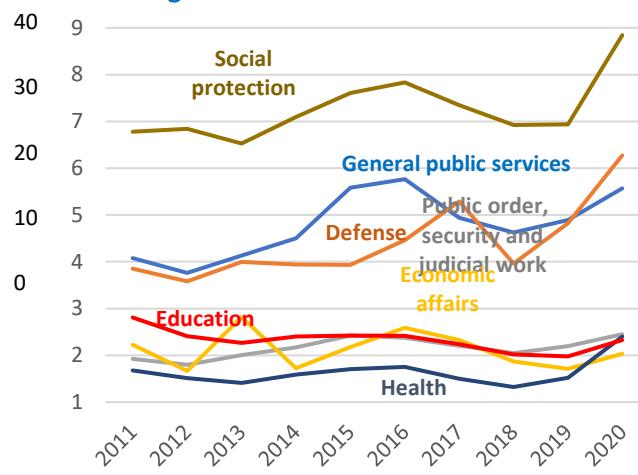
**45. Most of Armenia's spending goes to current expenditure, and within this spending, education and health are allocated the smallest shares** (Figures 7 and 8). A persistently low share of the budget is allocated to capital expenditure. Similarly, a small share of the budget goes to health and education, with much bigger shares of the budget going to social protection, general public services, and defense.

**Figure 7. Total Expenditures, Current vs. Capital. Percent of Total**



Source: Ministry of Finance, authors' analysis

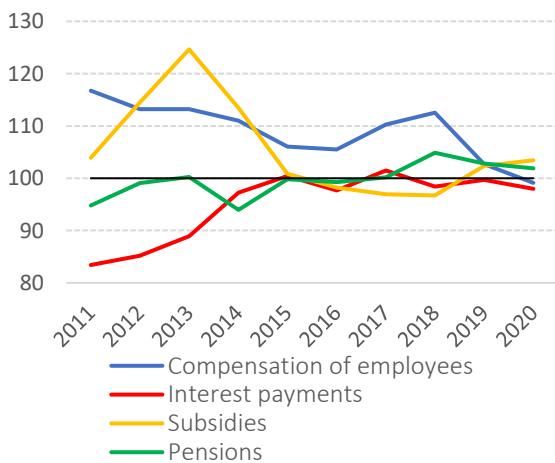
**Figure 8. Expenditure by Function. Percentage of GDP**



Source: Ministry of Finance, authors' analysis

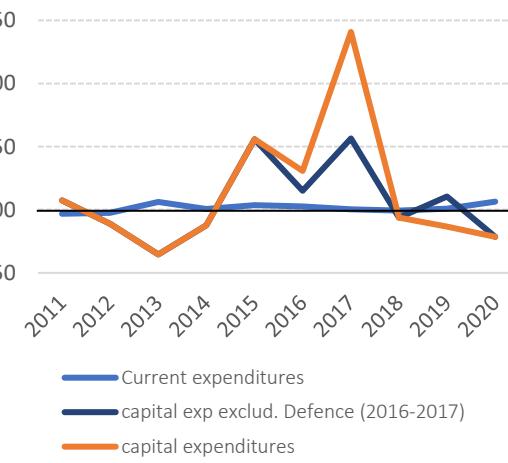
**46. There are significant deviations between allocations within medium-term expenditure frameworks, annual budget plans, and actual execution, particularly for capital expenditure.** Comparison between MTEF(s), annual budgets, and execution highlight how Armenia has faced persistent challenges with under-execution of capital spending. Recurrent spending execution has improved over time and tends to match the approved budget (Figure 9). However, capital investments have been more volatile, with execution rates varying widely from year to year (Figure 10). Armenia's poor performance on capital expenditure execution is underscored through comparison with peers, as Figures 11 and 12 show with respect to capital expenditure on roads, water, and sanitation.

**Figure 9. Current expenditures actual vs. budget. Percent**



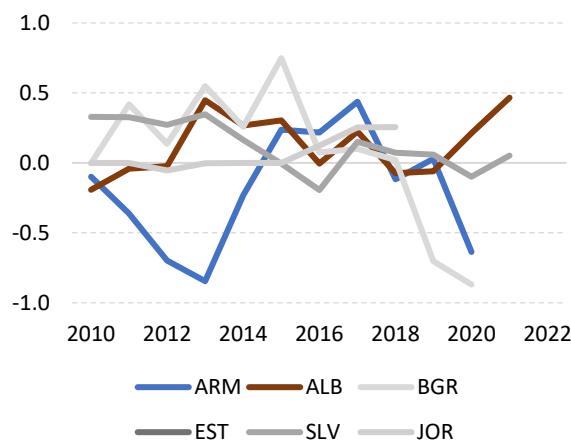
Source: MoF

**Figure 10. Actual execution vs. original budget plan. Percent**



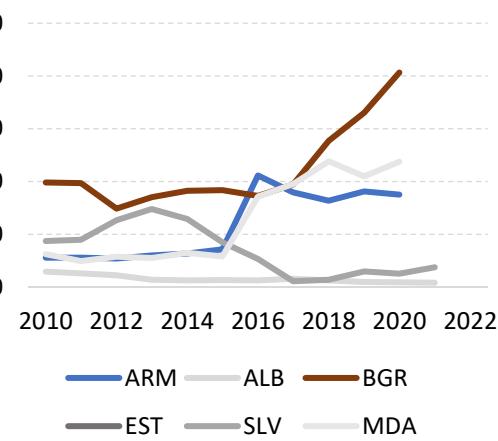
Source: MoF

**Figure 11. Capital Expenditure on Roads, Budget Deviation. Percentage of GDP**



Source: World Bank BOOST database, authors' analysis

**Figure 12. Capital Expenditure on Water and Sanitation, Budget Deviation. Percentage of GDP**



Source: World Bank BOOST database, authors' analysis

**47. Low levels of public capital spending have contributed to a reduction in the public capital stock (discussed in depth in Chapter 2).** From 2011 to 2020, public capital spending remained around 3.4 percent of GDP on average, lower than in the preceding decade (4.5 percent of GDP in 2000–2010). This contributed to a depleting public capital stock, which fell from 160 percent of GDP at the end of the 1990s to about 62 percent of GDP in 2017.<sup>28</sup> Public investment in infrastructure and higher public capital stock have been linked in the literature to increases in long-run productivity as well as to boosting aggregate demand in the short-run (Romp and De Hann, 2007; Bom and Ligthart, 2009). Moreover, public investment has positive spillovers on private investment. The impact is likely to be larger in developing countries facing enormous infrastructure gaps (Izquierdo et al., 2019; Gupta, 2021).

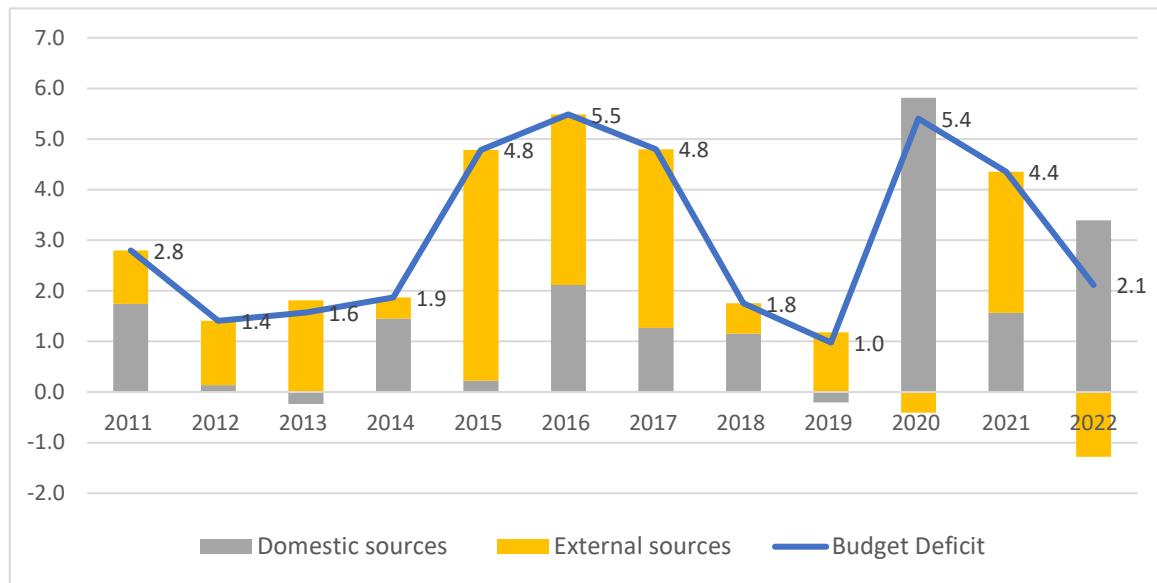
Section 1.2.3: Fiscal deficits have been kept in check, which has contributed to debt sustainability and macroeconomic stability

**48. Armenia has been able to maintain fiscal discipline over the last decade and keep deficits in check.** The budget deficit has averaged 3 percent of GDP over the past decade and significantly exceeded this level in two years driven by crises: military confrontation in 2016, and COVID-19 and military confrontation in 2020. Deficit financing relies on external financing, but the share of domestic financing has been increasing and exceeded external sources in 2020. The deficit levels and external financing fell sharply in 2021 and 2022 due to post-COVID recovery in 2021 and unprecedented double-digit growth in 2022 (Figure 13). As per the Medium-Term Public Debt strategy, the government is looking to further expand the share of domestically attracted sources in place of external borrowing.

<sup>28</sup> IMF. 2019. Public Investment Management Assessment Technical Assistant Report. Washington, DC: IMF.

**Figure 13. Budget deficit and financing sources.**

Percentage of GDP



Source: MoF

**49. Interest payments rose between 2009–2016 but have moderated since 2017 due to the increased share of domestic financing.** In 2009, after a few years of double-digit economic growth (2002–2007), Armenia was able to gain market access to non-concessional financing. Gaining market access coincided with the severe negative impact of the 2008–2009 Global Financial Crisis (GFC) on Armenia’s economy, which increased the need for foreign financing. These two factors in turn drove an increase in interest payments in that period from 0.9 percent of GDP in 2010 to 1.9 percent of GDP in 2016. Since 2016, the share of domestic financing has picked up. A key factor has been the full implementation of funded pensions since 2018, which has increased demand for long-maturity debt by asset managers. In 2020, out of a total AMD 165 billion (approximately USD 330 million) in interest payments, 52 percent was to domestic financing sources.

**50. Debt remains sustainable, but a high share of external debt increases Armenia’s vulnerability.** Government debt levels rose sharply from 14 percent of GDP in 2008 to 53.7 percent of GDP in 2017 driven by the impact of the Global Financial Crisis (GFC) in 2008–2009 and significant exchange rate depreciation in 2009 and 2014. The new government in 2018 showed a strong commitment to the amended fiscal rule (see below), and government debt consequently fell to 50.1 percent of GDP as at end-2019. The twin crises in 2020 pushed the debt-to-GDP ratio to 63.5 percent of GDP, but double-digit growth in 2022 helped bring about a sharp decrease in the debt ratio to 46.7 percent of GDP. As per the latest Debt Sustainability Analysis (DSA), updated in January 2023, Armenia’s overall debt remains sustainable. However, the DSA reveals the high sensitivity of the debt to a range of shocks, with shocks to growth and to the exchange rate having the most pronounced impact.<sup>29</sup> The main vulnerability is a high share of foreign currency debt,

<sup>29</sup> Using the Market Access Countries Debt Sustainability Analysis (MAC-DSA) templates, with standard shock definitions. The key shocks for the public DSA are: (i) real GDP growth reduction by 1 standard deviation for two consecutive years, which in turn leads to lower inflation and higher interest rates; (ii) an interest rate shock as

which remains elevated at 70.6 percent in 2021 despite declining from a high of 86.9 percent in 2009. Average weighted interest rate remains at 6.3 percent level at end-2022 while debt maturity is not a concern since two-thirds of total debt consists of long-term external credits and loans and Government Treasury Securities held largely by pension fund asset managers.

- 51. Improved fiscal discipline and debt sustainability has been supported by the introduction of fiscal rules.** In 2008, Armenia enacted a Public Debt Law that introduced fiscal rules governing public debt. These rules targeted rapid fiscal consolidation and broadened the definition of public debt as the sum of Government and Central Bank debt, including guarantees.<sup>30</sup> In 2015 the fiscal rule was amended by limiting the coverage of debt subject to the rule by excluding Central Bank of Armenia (CBA) debt from the definition. However, the fiscal rule did not have sufficient flexibility to allow for a counter-cyclical fiscal response to crises, which became evident after the GFC and the end-2014 currency crisis. The rule was therefore adjusted in 2017, to provide this flexibility. For example, a key change was the introduction of an escape clause under the fiscal rule for unexpected events or developments (which was activated in 2020 in response to the twin crises).<sup>31</sup>

Section 1.2.4: Fiscal policy has been counter-cyclical, helping dampen output volatility, but the degree of counter-cyclicity is lower than peers

- 52. A countercyclical fiscal policy can help stabilize the country's output growth.** Fiscal policy is countercyclical when the fiscal balance—the difference between revenue collection and spending—increases when output rises and decreases when it falls. This enables fiscal policy to stimulate demand when output is weak and to curb demand when economic growth is strong.<sup>32</sup> The result of such countercyclical policy is to help dampen output volatility.
- 53. Armenia's track record of reasonably good countercyclical fiscal policy has helped to lessen output volatility, but the degree of countercyclicity is below some of its peers.** In the face of multiple crises, including natural disasters and conflict, Armenia's reasonably good countercyclical fiscal policy over the last couple of decades has led to less volatile growth than in many of its peers. Peer countries such as Estonia, Georgia, and Romania have all had more volatile growth

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defined as an interest rate increase by the difference between the average real interest rate level over projection and a maximum real historical level, or by 200 basis points, whichever is larger; and (iii) an exchange rate shock using the estimate of overvaluation or maximum historical movement of the exchange rate, whichever is higher, with pass-through to inflation. The key shocks for the external DSA are: (i) a GDP shock as defined as 0.5 standard deviations lower growth compared to the baseline for the entire period; (ii) an interest rate shock as defined as 0.5 standard deviations higher interest rate compared to the baseline for the entire period; and (iii) an exchange rate shock as defined as a one-off 20 percent depreciation in 2023.

<sup>30</sup> The rule states that if government debt exceeds 50 percent of the previous year's GDP, the fiscal deficit for the next year must be reduced to 3 percent of the average nominal GDP of the previous three years. It further states that if government debt exceeds 60 percent of GDP, no further debt can be issued.

<sup>31</sup> Other changes include removing the state deficit ceiling and defining specific expenditure disciplinary rules, which would become effective as public debt levels reach certain thresholds.

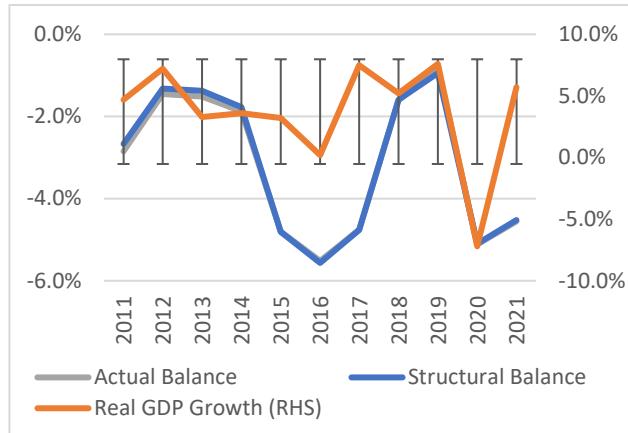
<sup>32</sup> Potential growth is the rate of growth an economy can sustain over the medium term without generating excess inflation. The output gap measures the difference between actual output and estimated potential output and is therefore an important indicator of inflationary pressures. For this analysis of cyclicity, an approximate proxy for the output gap can be used in real GDP growth.

(Panel 2, Figures I-VI, orange line with the standard deviation bars). Nevertheless, the correlation in Armenia between real GDP growth and the fiscal balance (as measured by the actual balance as well as the structural balance) is less strong than in Estonia or Poland (Panel 2, Figure VII).<sup>33</sup> This suggests that fiscal policy could play an even stronger moderating role in the Armenian economy's business cycle, which would help stabilize output even further.

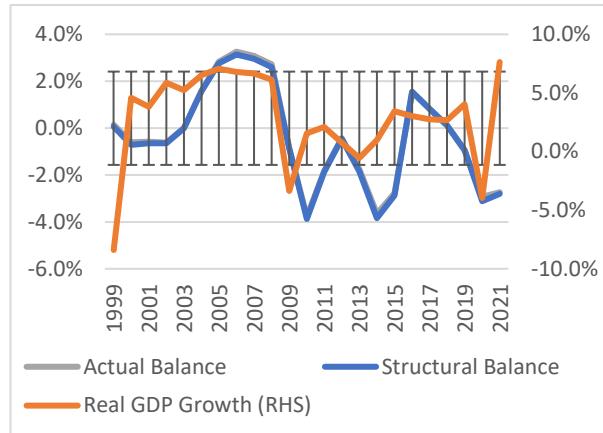
### Panel 2: Growth and the Budget Balance

In Percent and Percentage of GDP, unless otherwise specified

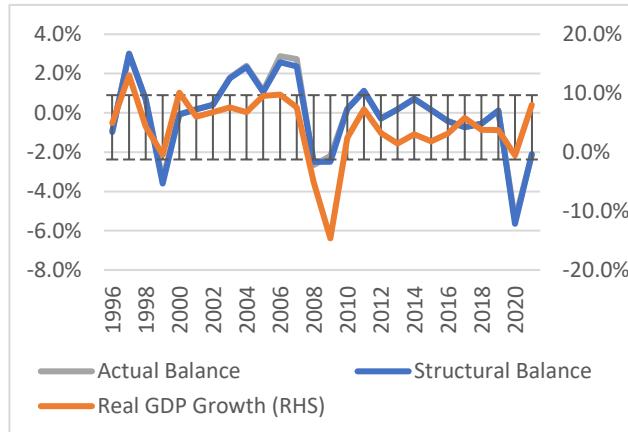
Panel 2, Figure I. Armenia



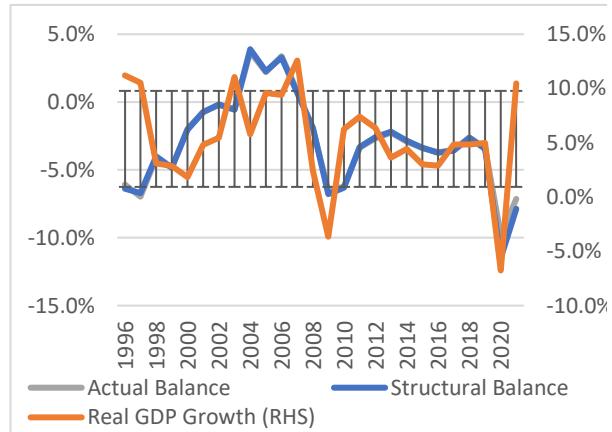
Panel 2, Figure II. Bulgaria



Panel 2, Figure III. Estonia

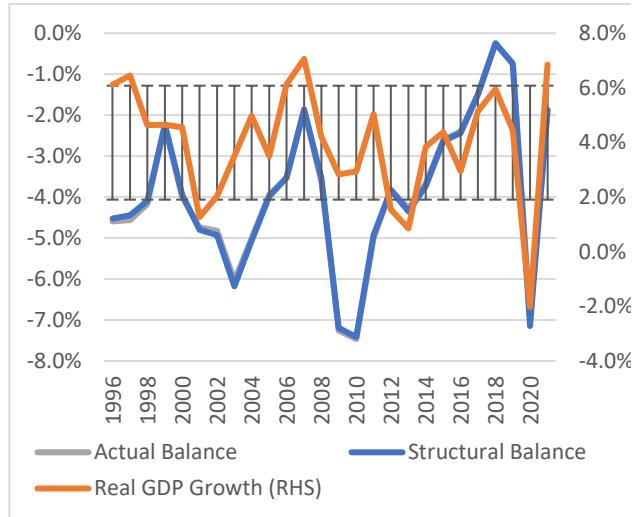


Panel 2, Figure IV. Georgia

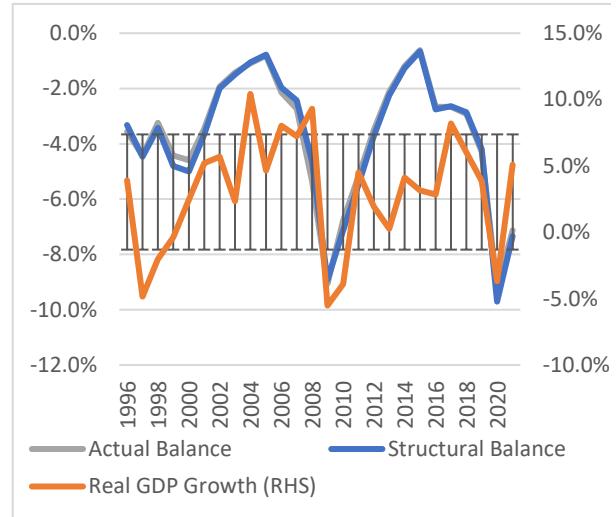


<sup>33</sup> The actual balance refers to the difference between actual revenue collection and executed spending. The structural balance is the difference between government revenues and expenditures corrected by the effects that could be attributed to the economic cycle as well as one-off events. This indicator aims to capture structural trends to assess whether fiscal policy is expansionary, neutral, or contractionary for a given period. A consistent result is found when looking at the correlation between actual/structural balance and the output gap for countries. These results are not included here due to the confidential (and disputed) nature of output gap estimates used.

Panel 2, Figure V. Poland

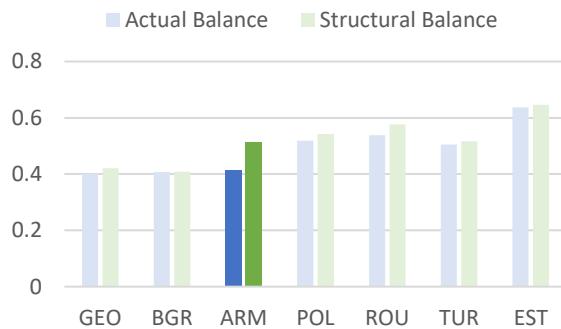


Panel 2, Figure VI. Romania



Panel 2, Figure VII. Comparison of Growth and Balance Correlations

Correlation coefficient between GDP growth and actual/structural balance



Sources: Macroeconomic-Fiscal Model (MFMod), World Bank; authors' analysis

Notes: See footnote 13 for a definition of actual and structural balance. The grey bars in the country figures show the standard deviation of real GDP growth: the longer the bars, the greater the standard deviation. The correlation chart shows the correlation coefficient between real GDP growth and the change in actual and structural balances of the selected countries.

Section 1.2.5: Fiscal policy has been progressive but has contributed less to reducing inequality when compared to peers

**54. Fiscal policy contributes to reducing inequality in Armenia, driven by the progressivity of pensions and direct transfers (Figure 14).** Applying the Commitment to Equity (CEQ) methodology (See Annex 1.2 for a discussion of the methodology) reveals that richer households paid a higher share of their market income in direct taxes and a slightly higher share of their

disposable income in indirect taxes.<sup>34</sup> However, the net marginal impact of taxation on the Gini of final income is fairly small at 0.020. Spending has a much stronger impact. Poorer households receive a higher share of direct transfers (mostly from the Family Benefit Program discussed in Chapter 3) with respect to their market income. As a result, direct transfers reduce the Gini by 0.108 points. However, poor and richer households receive a similar share of in-kind transfers with respect to their disposable income. All in-kind benefits are progressive with respect to the Gini of final income except for the post-secondary education benefit, which is slightly regressive.

- 55. The ability of fiscal policy to reduce poverty is driven by the pension system.** Using Armenia's monthly poverty line per adult equivalent in 2017 of AMD 41,462, the CEQ 2017 estimates that 35.4 percent of the population to be at or below the poverty line at the stage of market income.<sup>35</sup> The share of people under poverty falls to 20.9 percent when pensions are added to market income.
- 56. The contribution of fiscal policy to reducing inequality is smaller in Armenia than in other countries in the region, but this result needs to be interpreted with caution.** A general comparison of CEQ results reveal that: (i) Armenia had the lowest initial inequality at market income (before any fiscal redistribution) among a group of regional peers; and (ii) the effects of all taxes and transfers on inequality as measured by a reduction in the Gini coefficient was lower in Armenia than in these peers (Figure 15). Nevertheless, these comparisons of fiscal incidence must be treated with caution given variations in methodology and differences in data access.<sup>36</sup> Furthermore, the finding is tempered by the fact that Armenia had lower initial inequality to begin with.

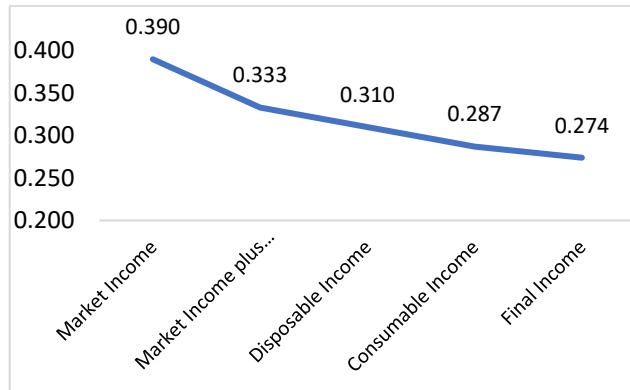
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<sup>34</sup> Younger, Stephen D, and Art Svi Khachatryan. 2017. Fiscal Incidence in Armenia. CEQ Working Paper 43, CEQ Institute, Tulane University and the World Bank. The report draws on ILCS 2017 data, which covers only 39 percent of the consumption recorded in the national accounts. This low coverage is mainly due to systematic non-participation of richer households. As a result, the CEQ 2017 underestimates indirect taxes from richer households with respect to official administrative accounts.

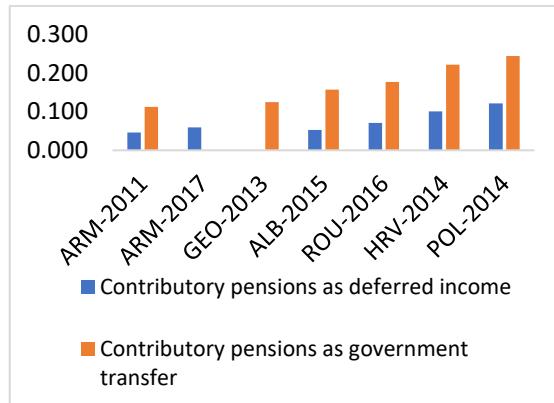
<sup>35</sup> Market income captures gross wages and salaries, income from capital, private transfers, income from own-production, and imputed rent.

<sup>36</sup> The distinction over treatment of contributory pensions is just one methodological difference among different CEQs carried out to date. Data coverage of the underlying surveys used differ substantially across countries and time periods. These limitations need to be considered when making comparisons of CEQ results across countries and time periods.

**Figure 14. Effects of the Fiscal System on Inequality Reduction in Armenia.** Change in Gini Coefficient



**Figure 15. ECA Comparison: Effects of the Fiscal System on Inequality.** Change in Gini Coefficient



Source: Incidence estimates for Armenia 2017 from Younger et al. (2017); all other incidence estimates from the Commitment to Equity Data Center on Fiscal Redistribution (retrieved January 2023); authors' analysis.

Section 1.2.6: Fiscal policy has had a limited impact on short-term output as measured by fiscal multipliers

**57. Fiscal multipliers estimate the impact of fiscal policy on short-term output.** Fiscal multipliers are generally defined as the ratio of change in output to discretionary change in government spending or tax revenue.<sup>37</sup> Fiscal multipliers are important because they can help guide a government's policies during an economic crisis and help with economic recovery. For example, in a fiscal consolidation, underestimating multipliers may lead countries to set unachievable fiscal targets and miscalculate the adjustment amount necessary to reach a target debt ratio.<sup>38</sup> We employ a Structural Vector Autoregression (SVAR) in estimating the multipliers. The data is seasonally adjusted before being log transformed. As such, the multiplier is obtained by multiplying the impulse responses by the average ratio of GDP to spending component. As a robustness exercise, we also compute the multipliers utilizing local projections with Blanchard-Perotti<sup>39</sup> identification, where shocks are instrumented with the Blanchard-Perotti shock to circumvent endogeneity problems. Annex 1.3 provides an in-depth explanation for the methodology used to estimate the multipliers in this chapter.

**58. The aggregate impact of government expenditure on output has been muted in Armenia.** The estimates of spending multipliers are shown in Tables 1 and 2, where both the cumulative orthogonalized impulse response function (COIRF) and the cumulative multipliers (in brackets) are reported.<sup>40</sup> The estimates for total government expenditure multipliers are between 0 to -0.19 (Table 1), but these results are statistically non-significant. Based on the literature, first-year multipliers between 0.1-0.3 are considered "small," between 0.4-0.6 "medium," and 0.7-1.0

<sup>37</sup> IMF. 2014. *Fiscal Multipliers: Size, Determinants, and Use in Macroeconomic Projections*. Washington, DC: IMF.

<sup>38</sup> Blanchard and Leigh. 2013. *Growth Forecast Errors and Fiscal Multipliers*. American Economic Review.

<sup>39</sup> The Blanchard and Perotti shock (2002) is an orthogonal spending shock. See Annex 1.3 for more details.

<sup>40</sup> The cumulative multiplier is simply the sum of the IRF over a period of time. For example, at time t=0, the IRF and the cumulative multipliers are the same, whereas at t=5, the cumulative multiplier is the sum of the IRF multipliers over the first five quarters.

“large.”<sup>41</sup> Factors such as the cyclicalities of government spending impact these multipliers as procyclicality crowds out the private sector in good times and amplifies economic downturns during crises. Similarly, due to the procyclicality of government expenditure, it becomes difficult to identify the direction of causality. In other words, it becomes difficult to identify if spending is driving the output change or vice versa.

**59. Capital spending is associated with the largest, most positive spending multiplier.** Capital spending is associated with a small-to-medium positive standard multiplier of 0.39 ten quarters after the spending has occurred and 0.33 after fifteen quarters. This means that AMD 100 in capital spending is now associated with an increase in output of AMD 39 after ten quarters and AMD 33 after fifteen quarters. In contrast, current expenditure is associated with negative, small, standard multipliers. Current spending of AMD 100 is now associated with an AMD 7 decline in output after ten quarters. At sector level, health and education are associated with the most potent fiscal multipliers, but these are only statistically significant at the 5 percent level after 10 or 15 quarters (Table 2). In contrast, social expenditure, housing, and cultural expenditure all have negligible impacts on output.

**Table 1: Government Expenditure Multipliers (Cumulative)**

	Total Expenditure	Current Expenditure	Capital Expenditure	Defense Expenditure	General Public Service Expenditure	Maintenance Expenditure
t=0	0.00 (0.00)	0.00 (0.00) -0.11** (-	0.02 (0.02)	0.05** (0.05**)	-0.01 (-0.01) -0.56**	-0.02 (-0.02)
t=5	-0.02 (-0.07)	0.29**) (- -0.07** (-	0.19 (0.47)	0.05 (0.41)	(-1.38**) (- -0.58** (-	0.34 (1.10)
t=10	-0.01 (-0.19)	0.83**) (- -0.03 (-	0.39** (2.13)	0.22 (1.21)	4.88**) (- -0.27 (-	0.47 (2.94)
t=15	-0.01 (-0.19)	0.98**) (-	0.33** (3.97)	0.01 (1.54)	6.58**) (-	0.30 (5.25)

Notes: The sample period is between Quarter 1, 2000 to Quarter 4, 2021. t stands for the period from impulse response function. At t=0, this is the impact multiplier. Multipliers are estimated from cumulative orthogonalized impulse response functions. \*\* represents significance at the 5 percent level. Cumulative multipliers are shown in parentheses.

<sup>41</sup> IMF. 2014. *Fiscal Multipliers: Size, Determinants, and Use in Macroeconomic Projections*. Washington, DC: IMF.

**Table 2: Government Expenditure Multipliers 2 (Cumulative)**

	Health Expenditure	Education Expenditure	Social Expenditure	Housing Expenditure	Culture, Sport, Information, & Religion Expenditure
t =0	-0.15 (-0.15)	-0.02 (-0.02)	-0.05 (-0.05)	0.19 (0.19)	0.00 (0.00)
t = 5	0.44 (0.48)	0.40 (1.08)	-0.29 (-1.09)	2.51 (7.80)	1.54(3.70)
t = 10	0.78 (4.03)	0.50** (3.57)	-0.35 (-2.78)	3.24(23.58)	2.20 (14.18)
t =15	0.58** (7.43)	0.38** (5.73)	-0.30 (-4.42)	2.35 (37.32)	1.69 (23.84)

Notes: t stands for the period from impulse response function. At t=0, this is the impact multiplier. Multipliers are estimated from cumulative orthogonalized impulse response functions. \*\* represents significance at the 5 percent level. Cumulative multipliers are shown in parentheses.

**60. Overall, changes in the composition and efficiency of fiscal policy could enable it to have a stronger expansionary impact on output in aggregate.** On the expenditure side, this analysis has shown that capital expenditure has a much more positive impact on output than other spending categories. Changing the composition of spending to increase the allocation of capital spending could thus increase the impact of fiscal policy on short-term growth. Spending efficiency matters in addition to spending composition, for example, maximizing the cost efficiency of an infrastructure project would increase the fiscal multiplier associated with capital spending. On the tax side, the literature suggests that improving tax productivity (the amount of revenue collected from a given statutory tax rate) could reduce the distortionary impact of taxes on growth. Moreover, just as with spending, the composition of taxes could impact tax multipliers. For example, recent research has found that carbon taxes are associated with much lower fiscal multipliers than income taxes or broad consumption taxes.<sup>42</sup>

#### Section 1.2.7: Spending efficiency is a key area of concern

**61. Efficiency of capital spending and on key priorities in education spending is a key concern.** Public sector spending efficiency can be examined by looking at the distance between observed input-output combinations and an efficiency frontier estimated by means of the Data Envelopment Analysis technique (DEA).<sup>4344</sup> Annex 1.4 provides a technical explanation of the DEA approach. Applying this method reveals that Armenia's efficiency of expenditure in areas such as infrastructure, road transport, and education are all some way behind the efficiency frontier. For example, Jordan spends less than Armenia on infrastructure but enjoys higher quality of infrastructure. Albania spends more on road transport than Armenia and combines this higher spending with higher quality. On education, Armenia scores particularly poorly compared to peers such as Albania, Bulgaria, and Estonia, which all spend more on education and combine that spending with higher efficiency (Panel 3). On health measured by life expectancy at birth) Albania

<sup>42</sup> Shoder, C. 2022. Regime-dependent environmental tax multipliers: Evidence from 75 countries. Journal of Environmental Economics and Policy.

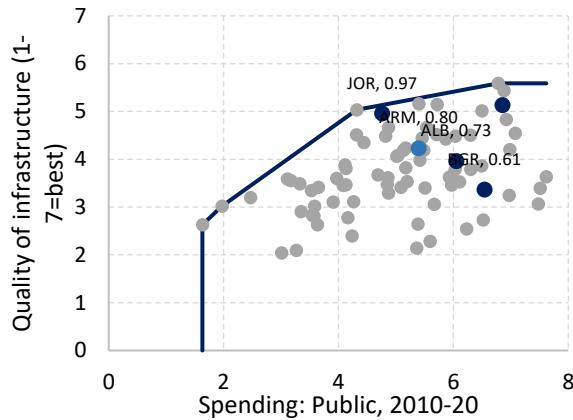
<sup>43</sup> DEA is a non-parametric linear programming technique in which deviations between observed values and an estimated production possibility frontier are attributed to inefficiency.

<sup>44</sup> Herrera and Ouedrago. 2018. Efficiency of Public Spending in Education, Health, and Infrastructure: An International Benchmarking Exercise. Washington, DC: World Bank.

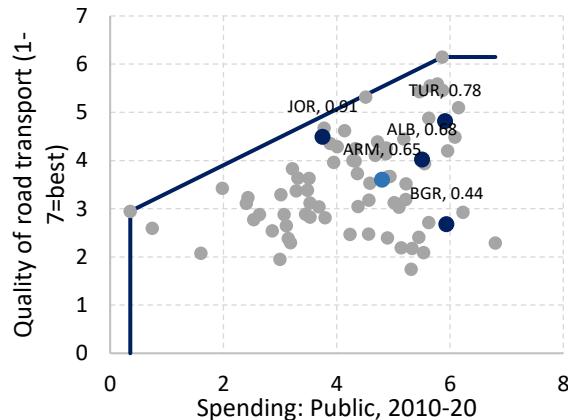
stands out, in particular for spending more than Armenia and combining this spending with much higher efficiency.

### Panel 3: DEA Frontier Analysis

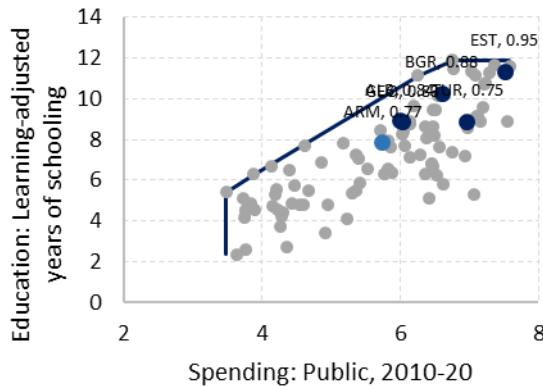
**Panel 3, Figure I. DEA Frontier Analysis: Efficiency of Infrastructure Expenditure. Index (1-7)**



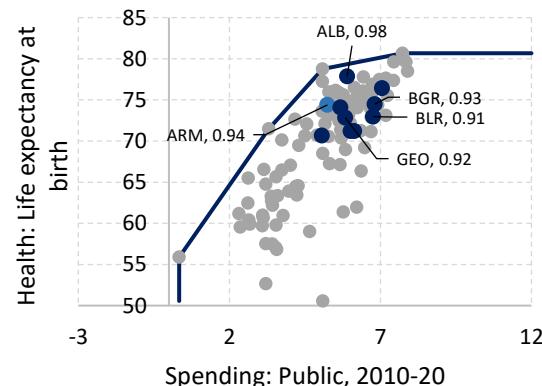
**Panel 3, Figure II. DEA Frontier Analysis: Efficiency of Road Transport Expenditure. Index (1-7)**



**Panel 3, Figure III. DEA Frontier Analysis: Efficiency of Education Expenditure. Index (1-7)**



**Panel 3, Figure IV. DEA Frontier Analysis: Efficiency of Health Expenditure. Index (1-7)**



Source: Spending data from Ministries of Finance; World Bank BOOST Database; Quality of expenditure draws on World Economic Forum data; World Bank Expenditure Dashboard (2023).

### Section 1.3: How can Armenia implement key policy proposals under the government program while ensuring the sustainability of public finances?

- 62. In the medium term, fiscal policy will be asked to deliver on policy proposals under the 2021-2026 government program in an increasingly uncertain economic environment.** This analysis focuses on selected policy proposals: (1) increased health spending; (2) continued implementation of the pension system reforms; and (3) additional social assistance spending

(these reforms are discussed in detail in Chapters 3 and 4).<sup>45</sup> Furthermore, heightened global and regional uncertainty in the medium-term imply higher downside risks for growth in the medium-term. A growth shock in turn may have a significant impact on the medium-term fiscal picture and impact the government's ability to deliver on these policy commitments.

- 63. Delivering these policy proposals while remaining compliant with the existing fiscal rules will require challenging decisions and tradeoffs on spending, taxes, and debt.** Undertaking a rigorous costing of these proposals is the first step. Next, if the proposals require a permanently higher level of spending, the government must look at the implications this will have on deficit and debt dynamics in a benign as well as a higher-risk economic scenario. Finally, the government will need to consider a combination of the following measures to absorb the additional spending: (i) expenditure cuts in non-priority programs; (ii) improving the efficiency of spending within programs to generate savings; (iii) additional revenue mobilization; and (iv) additional debt financing.

Section 1.3.1: Policy commitments are likely to increase spending pressures significantly in the medium term

- 64. This analysis starts by modeling the following fiscal reforms, the expenditures associated with select policy commitments under the 2021-2026 government program and the revenue impact of tax reforms already included in the government's 2023-2025 Medium-Term Expenditure Framework (MTEF).** The key policy commitments modeled are highlighted above, with the cost of these additional commitments estimated to be 3 percent of GDP in 2026 (see Table ES1 for a summary, and Chapter 3 and 4 for further analysis). On the taxation side, the simulation assumes the government is successful in implementing the tax policy and revenue administration reforms included in its MTEF, including: (1) rationalization of "non-targeted or ineffective tax privileges" (tax expenditures); and (2) reforms of businesses taxes (profit taxes, turnover taxes, and taxation of small and medium enterprises) that aim to ensure "a fair and equal distribution of tax burden" and to reduce tax avoidance and evasion through practices such as firm-splitting, under-reporting, and fake invoicing.
- 65. The impact of these fiscal reforms on fiscal space and debt are first assessed in a favorable economic environment (Baseline scenario<sup>46</sup>) and in a scenario where the economy faces a growth and exchange rate shock (Scenario 1: Macro Shock).** In this shock scenario, real GDP growth is reduced by 1 standard deviation for two consecutive years, and there are accompanying shocks to the interest rate and the exchange rate. The magnitude of these shocks on real GDP growth, the interest rate, and the exchange rate was defined following the standard approach used by the IMF-World Bank in the DSA Analysis for Market Access Countries.<sup>47</sup> As a result of these shocks, real GDP growth contracts by -0.11 percent in 2023, edges up to 0.24 percent in 2024, before finally recovering to 5.0 percent in 2025 (see Table 3 for key scenario assumptions).

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<sup>45</sup> As noted earlier, additional capital spending is not modeled as the MTEF 2023-2025 already programs for a significant increase.

<sup>46</sup> Baseline scenario uses the MTEF 2023-2025 approved in July 2022 as the benchmark, as this was the latest framework available at the time of preparation of the report.

<sup>47</sup> For more on this approach, see *IMF Policy Paper: Review of the Debt Sustainability Framework for Market Access Countries*, IMF, January 2021.

**66. A second scenario (Scenario 2: Macro Shock + Fiscal Reforms) builds on Scenario 1 by assessing the impact of a fiscal reform package.** The fiscal reforms package includes:

- **More ambitious tax reforms:** In response to the deficit and debt crises induced by the macroeconomic shock, the government may be forced to undertake more intensive tax reforms than those included in the MTEF projections. The modeled reforms include further efforts to close policy gaps (e.g., by further reducing the threshold for turnover taxes and reducing exemptions); tackling administrative gaps (e.g., by lowering the burden of paying taxes and strengthening compliance management); and increasing excise duties for sugar-sweetened beverages at a faster than highlighted in the current MTEF.
- **Selected reforms to increase spending efficiency:** Spending efficiency gains in the sectors studied in the PER (i.e., health and social protection) are included in the scenario. The reforms include the phasing out of government contributions to the funded pensions pillar; freezing of childbirth grant levels at current nominal level; consolidating small social assistance programs; introducing reforms to reduce pharmaceutical costs; and implementing reforms to reduce the hospital-centric nature of the health system (see Table ES2 for a summary of efficiency gains, with further details provided in Chapters 3 and 4).

**Table 3: Scenarios Modeled and the Key Assumptions**

	Real GDP Growth*	Expenditure Assumptions	Tax Revenue Assumptions
<b>Baseline</b>	2023: 4.40 2024: 4.80 2025: 5.00 2026: 5.00	- MTEF 2023-25 expenditure allocations; <b>plus</b> - Additional spending on selected policy proposals (3 percent of GDP in 2026)	- MTEF 2023-25 tax revenue assumptions, including impact of reforms already underway.
<b>Scenario 1 (Macro Shock)</b>	2023: -0.11 2024: 0.24 2025: 5.00 2026: 5.00	- Same as baseline	- Same as baseline
<b>Scenario 2 (Macro Shock + Fiscal Reforms)</b>	Same as macro shock.	- Baseline assumptions; <b>plus</b> - Impact of reforms to improve expenditure efficiency (0.5 percent of GDP savings in 2026)	- Baseline assumptions; <b>plus</b> - Impact of reforms to generate additional revenue (1.7 percent of GDP in 2026)

\* Baseline Real GDP growth for 2023-2025 is based on World Bank Macro Poverty Outlook (March 2023).

**67. Panel 4, Figures I-VI summarize the main results of these scenario simulations.** As a result of the policy commitments, the baseline sees a gradual increase in the expenditure-to-GDP ratio of 3.8 percentage points over the medium-term horizon of 2022 to 2026. This increase is driven by the additional cost of the policy commitments (3 percent of GDP<sup>48</sup>) and by additional financing costs

<sup>48</sup> The analysis looks to avoid double counting of spending for the policy proposals. However, minor double counting could not be avoided due to unavailability of the detailed expenses under social protection programs in the MTEF 2023-2025 at the time of analysis.

due to increased financing needs. In Scenario 1, expenditure remains the same as the baseline in level terms but jumps up to 34.8 percent of GDP because of a shrinking GDP resulting from the macro-shock.<sup>49</sup>

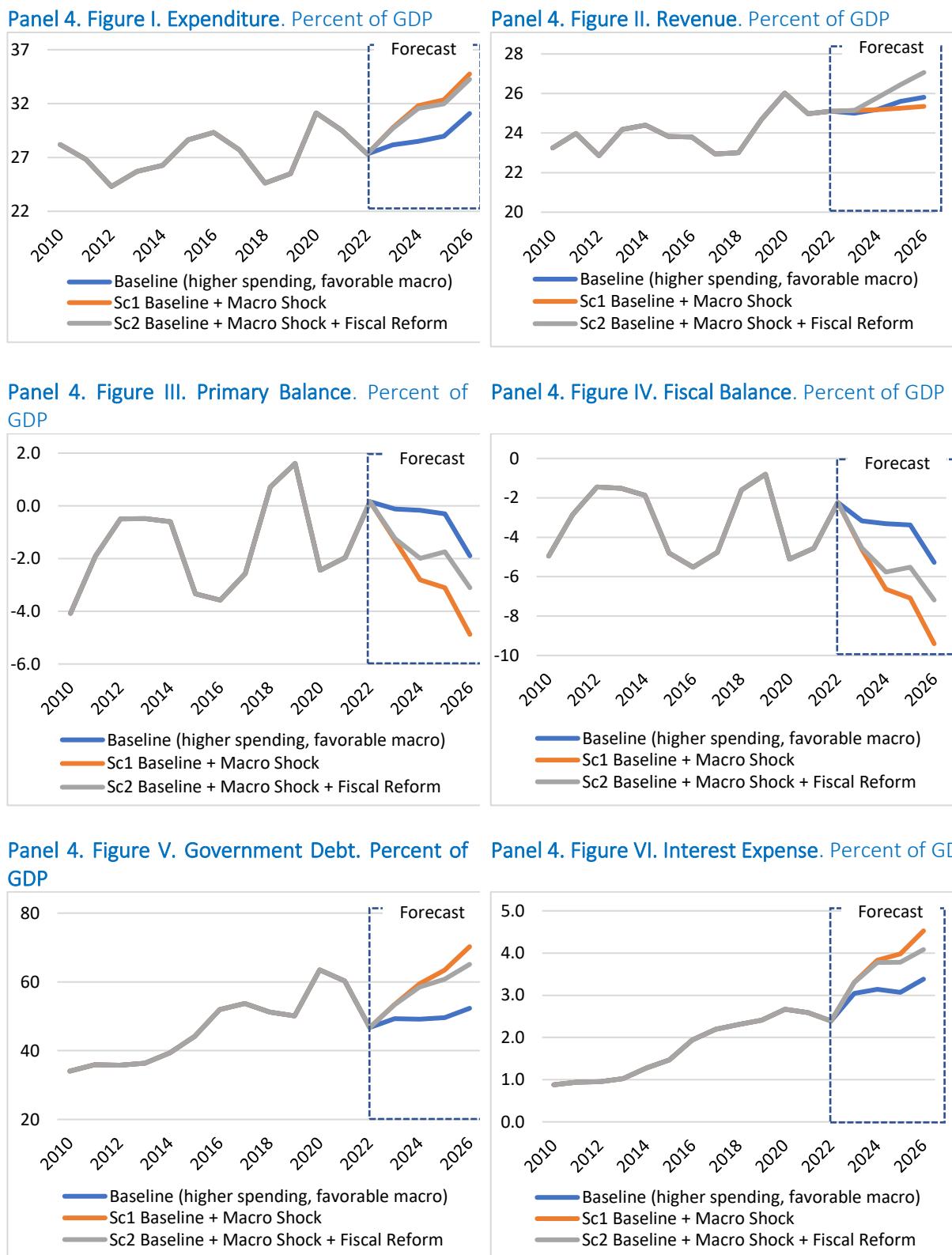
- 68. Revenue as a share of GDP falls during the shock.** Consistent with the experience of previous crises, revenue falls more sharply than GDP during a shock. Drivers of more rapid revenue decline could include: greater tax noncompliance; weaker tax enforcement by the government; and emergency tax relief measures introduced to support households and businesses during a crisis.<sup>50</sup> As a result, Scenario 1 sees a fall in the revenue-to-GDP ratio of approximately 0.46 percentage points compared to the baseline in 2026.
- 69. Higher government spending turns the primary balance negative and widens the projected fiscal deficit.** Even in favorable macroeconomic settings, higher government spending turns the primary balance negative and thus widens the fiscal deficit. As a result, by 2026, the fiscal deficit as a ratio of GDP more than doubles what it was in 2022, reaching approximately 5.3 percent. In Scenario 1, the macro-shock adds fuel to the fire, resulting in a substantial widening of the primary balance and of the fiscal deficit, with the latter reaching 9.4 percent of GDP.
- 70. Debt is moderate in the baseline but jumps because of the macro shock, and interest expenditure more than doubles in the shock scenario.** The baseline has a modest impact on government debt overall, with the ratio set to creep up gradually to 52.3 percent of GDP by 2026 compared to 46.7 percent of GDP in 2022. In historical terms, this ratio should be lower than four out of the last six years. However, debt jumps in the shock scenario, breaching the government's debt threshold of 60 percent in 2025 and reaching approximately 70.3 percent by 2026. While this projection is sensitive to assumptions about global interest rates, it is safe to say that breaching the debt ceiling is highly likely in a macro shock. Due to mushrooming debt, interest expenditure more than doubles between 2022 and 2026 in the shock scenario, reaching approximately 4.1 percent of GDP by 2026.
- 71. A fiscal reform package that combines higher tax revenue with some expenditure efficiency gains is unable to prevent a breach of the debt ceiling under the shock scenario.** More ambitious tax reforms in Scenario 2 are assumed to add approximately 1.7 percentage points of GDP by 2026 compared to the revenue ratio in Scenario 1. Expenditure savings of 0.5 percent of GDP are also assumed to be attained by 2026. Nevertheless, this fiscal package is unable to stop debt from breaching the statutory debt limit of 60 percent of GDP by 2025, and debt is projected to continue to rise to approximately 65.1 percent of GDP by 2026.

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<sup>49</sup> Much higher levels of expenditure can also be modeled. This can be driven by increases in social assistance and pension spending if an economic crisis is particularly deep and puts pressure on the government to strengthen its crisis response.

<sup>50</sup> For example, a common response during the Covid-19 pandemic was for governments, including Armenia, to suspend tax withholdings, delay tax filings, suspend tax audits, all of which contributed to a more severe revenue contraction compared to GDP.

#### Panel 4: Fiscal Reforms and the Medium-Term Fiscal Framework



Source: Ministry of Finance data; World Bank Fiscal Sustainability Analysis (FSA) model; World Bank Debt Sustainability Analysis (DSA) model; authors' analysis

Sustainability Analysis (FSA) model; World Bank Debt

### Section 1.3.2: Increasing spending efficiency will be key to absorbing spending pressures

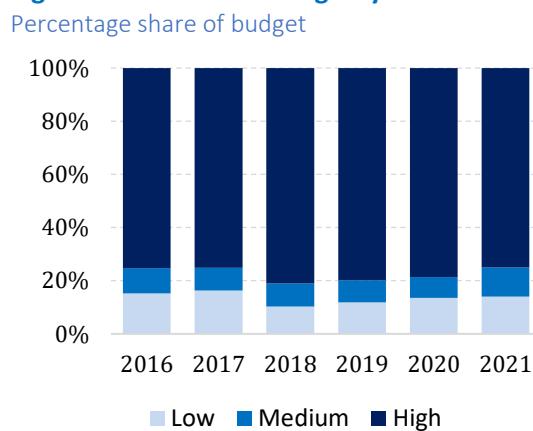
- 72. In summary, the simulations find that the spending associated with the government's policy proposals seems affordable in a favorable economic environment but not in the event of an economic shock.** Ambitious spending on health and social protection has only a modest impact on public debt when growth dynamics are favorable. However, this benign picture changes dramatically in the event of an economic shock that hits growth, exchange rates, and interest rates. In such a scenario, even a plausible increase in tax effort and some efficiency gains are unable to stop public debt breaching the statutory 60 percent of GDP threshold.
- 73. How can Armenia deliver on these policy proposals in the event of an economic shock while remaining compliant with the fiscal rules in place?** This could entail a combination of the following fiscal reforms: (1) more ambitious efforts for revenue mobilization; (2) expenditure cuts in lower priority programs; and (3) a more rigorous effort to improve efficiency of programs to reduce costs and generate savings. The feasibility and potential impact of each of these reforms are considered in turn. Increasing debt financing by implicitly breaching existing fiscal rules is not considered an option given its negative impact on fiscal credibility and the potential impact on interest payments (which are already elevated in a shock scenario).
- 74. Armenia can raise some additional revenues and should consider revising the existing tax policy roadmap to incorporate these changes.** Building on existing strengths in tax administration and policy, Armenia could consider additional revenue reforms beyond the existing plans in the tax policy roadmap. Some potential reforms include lowering the threshold for turnover taxes, reducing exemptions, and increasing further excise duties for sugar-sweetened beverages. This report estimates that these reforms could generate an additional 1.7 percent of GDP. However, the distributional and economic impacts of these reforms need to be carefully examined and are not covered in this report.<sup>51</sup>
- 75. Additional revenue reforms beyond what is modeled in this report could be challenging in the event of an economic shock.** Tax increases during a crisis beyond the ambitious tax reforms already modeled may hurt growth and are more likely to be resisted by a population already under great economic strain. If the government were to consider raising additional revenue, the choice of tax handle and the sequencing and timing of reforms will matter a great deal for political feasibility. Comparing the fiscal multipliers for different taxes can help the government select the handles that are least harmful to output. As highlighted earlier, cross-country modeling has found that environmental taxes have the lowest impact on output and only a temporary, moderate impact on jobs in contrast to raising labor, business, or general consumption taxes, which can have larger negative impacts. The sequencing and timing of the introduction of such tax reforms could also influence political acceptability. For example, reform of progressive taxes should ideally be sequenced before other taxes that are more likely to impact broader segments of the population as this will increase the sense that the government is prioritizing fairness by putting a greater burden on those with the greatest capacity to pay. General or specific consumption taxes also need to consider the broader inflationary environment.

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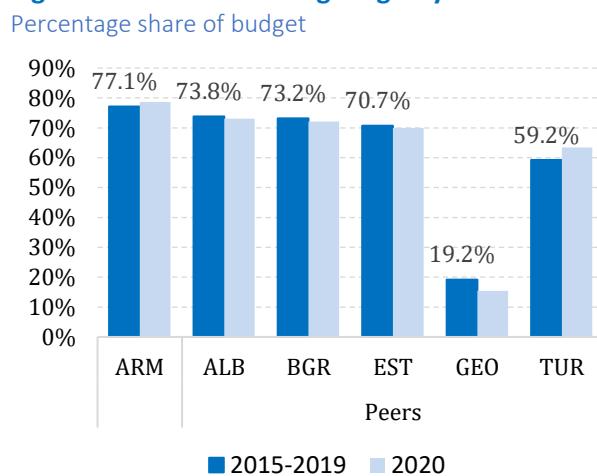
<sup>51</sup> A follow-up Public Expenditure Review (PER) is underway, with a dedicated chapter on revenue mobilization, including the analysis of potential reforms, and a deeper discussion of drivers of past revenue mobilization, including evolution of tax compliance and tax expenditures.

**76. Expenditure cuts may be hindered by a high degree of budget rigidity, which may imply that capital expenditures bear the brunt of the adjustment** (see Annex 1.6 for the definition of budget rigidity). Armenia's high budget rigidity has been a persistent feature in recent years (Figure 16). In fact, between 2015 and 2019, about 77 percent of the budget on average was on spending areas assessed as "high" rigidity, substantially greater than in Georgia (19 percent), Turkey (59 percent), and even more than in ECA countries that rank very high in rigidity (Albania, Bulgaria, and Estonia) (Figure 17). In practice, high rigidity implies that spending cuts will likely be concentrated in less rigid spending categories, which includes capital expenditures. This in turn has an impact on short-run economic output (as capital spending has the highest output multiplier), hindering the recovery from the economic shock.

**Figure 16. Evolution of Rigidity in Armenia**



**Figure 17. Evolution of High Rigidity**



Source: Ministries of Finance, World Bank BOOST Database; World Bank Force and Momentum Model

**77. The final area is improved spending efficiency of programs.** This PER focuses on reforms in selected areas of spending (health and social protection) and identifies savings of at least 0.5 percent of GDP (Table ES2). However, additional efficiency savings could be generated in other sectors not covered under this PER. This includes sectors such as education and roads, which show significant inefficiencies at the aggregated level (as highlighted in Section 1.2). To identify such savings, a systematic spending review of major programs could be undertaken, building on the performance and budgetary information generated under the program-based budgeting (PBB) process.

#### Section 1.4: Conclusion

**78. The chapter highlights several messages about Armenia's fiscal performance over the last two decades:**

- Supported by reforms, there have been impressive gains: (i) revenue collection has increased significantly, albeit with challenges remaining in terms of quality of revenue collection; (ii) spending levels have remained contained; and (iii) fiscal deficits have remained in check, which has contributed to macroeconomic stability and debt sustainability.

- Fiscal policy has been counter-cyclical and progressive. However, its role in supporting short-term growth in output has been muted, except for capital spending.
- The key area of concern is spending inefficiency in converting spending inputs to outcomes in key sectors such as education, roads, and health.

**79. Fiscal policy will be tested over the medium term in order to deliver on key policy proposals in an uncertain economic environment.** This chapter simulates policy proposals in the areas of health and social protection. These are likely to increase spending pressures significantly, by 3.0 percent of GDP directly and by an additional 0.8 percent of GDP indirectly through increased borrowing costs, over currently programmed MTEF expenditure levels by 2026. In the event of an economic shock, which is possible given high uncertainty and downside risks, this would lead to debt increasing significantly. Even with ambitious tax reforms beyond what is currently incorporated in the MTEF, debt is projected to increase to 65 percent of GDP by 2026 (higher than the statutory limit of 60 percent of GDP).

**80. The potentially significant impact of these policy proposals underscores the importance of systematically incorporating these into the MTEF.** Armenia has made impressive gains in rolling out the MTEF, which is reflected in reduced gaps between the MTEF budget and actuals. However, the MTEF does not currently set out clear costings for these policy proposals. Given their potentially significant size, a rigorous, realistic costing exercise is warranted for the different policy proposals. These costed reforms will then need to be integrated fully within the annual budget. This in turn will trigger difficult decisions to be made about which spending categories need to be reduced and whether policy ambition may need to be downgraded based on clear criteria.

**81. Considering the spending pressures, Armenia will need a combination of budgetary cuts, revenue mobilization, and improvements in spending efficiency if it is to deliver on policy commitments in the event of an economic shock.** These choices will be shaped by existing strengths and weaknesses in the system, as reflected in past fiscal performance. First, additional debt financing is not a feasible option as it would lead to non-compliance with the well-defined fiscal rules and further increase borrowing costs. Second, additional revenue mobilization may be feasible up to a certain extent by building on existing strengths in tax policy and administration. As a start, Armenia could consider revising its existing tax policy roadmap to enable additional revenue mobilization. Third, expenditure cuts or a downgrading of policy ambition will be necessary. However, expenditure adjustments will be hampered by high budget rigidity, with the brunt of the adjustment likely to be borne by capital spending (which is less rigid but is critical for short-run growth). Finally, the difficult spending choices underscore the need to improve spending efficiency immediately, which could provide an additional cushion in the event of an economic shock.

**82. Improving spending efficiency in selected areas is the focus of the rest of the PER.** The remaining chapters provide specific recommendations for improving the efficiency of capital expenditures (Chapter 2), social protection spending (Chapter 3), and health spending (Chapter 4). Chapters 3 and 4 will also touch upon the important aspect of improving the equity of spending.

## Annex 1.1: Expenditure by Economic and Functional Classifications

2021 State Budget (millions AMD)

	General public services	Defense	Public order, security & judicial work	Economic relations	Environmental protection	House-building & public utilities	Healthcare	Recreation, culture and religion	Education	Social security	Spend by Economic Classifications
4100 Payment for labor	49,330,266		115,510,000	5,124,700	1,127,379	982,637	1,134,771	414,289	2,354,518	5,432,922	<b>181,411,483</b>
4200 Acquisition of services and goods	12,599,011	28,085,247	23,752,315	14,614,700	277,848	89,743	107,277,047	8,195,006	1,447,101	2,142,095	<b>198,480,112</b>
4400 Interest payments	180,836,185		0		0		0		0		<b>180,836,185</b>
4500 Subsidies	2,224,148		41,444	35,617,604	37,034		0		98,857,785		<b>136,778,014</b>
4600 Grants	101,962,383	437,331	8,884,619	18,424,810	3,509,658	894,869	5,686,325	20,026,963	9,242,009	35,622,217	<b>204,691,185</b>
4700 Social allowances and pensions	2,055,868	2,784	1,683,640	1,072,023	153	210	15,547,092	1,263,722	24,167,554	575,364,840	<b>621,157,885</b>
4800 Other costs	23,358,822	199,799,255	4,361,327	7,959,090	254,884	278,484	28,192,401	105,492	110,490	191,286	<b>264,611,531</b>
5100 Fixed assets	8,606,670	107,663,733	5,763,279	68,950,968	817,327	7,295,912	2,659,186	418,590	12,906,883	1,252,049	<b>216,334,596</b>
<b>Expenditures by Functional Classifications</b>	<b>380,973,352</b>	<b>335,988,350</b>	<b>159,996,623</b>	<b>151,763,895</b>	<b>6,024,282</b>	<b>9,541,856</b>	<b>160,496,822</b>	<b>30,424,062</b>	<b>149,086,340</b>	<b>620,005,409</b>	<b>2,004,300,990</b>

Source: MOF

## Annex 1.2: The Commitment to Equity (CEQ) Methodology and application to Armenia

The Fiscal Incidence Analysis in Armenia is performed under the Commitment to Equity (CEQ) Methodology, a systematized approach to assess the distributional impacts of taxes and transfers across households.<sup>52</sup>

**The CEQ is a methodology to assess the impact of fiscal policies on poverty and inequality.** The CEQ Assessment is designed to address four main questions:

1. How much income redistribution and poverty reduction are accomplished through fiscal policy?
2. How equalizing and pro-poor are specific taxes and government expenditure?
3. How effective are taxes and government expenditure in reducing inequality and poverty?
4. What is the impact of fiscal reforms that change the size and/or progressivity of taxes or benefits?

**The CEQ methodology allows for broad coverage of the fiscal system,** by including direct taxes, indirect taxes, direct transfers, indirect subsidies, and in-kind transfers from health and education. Another advantage is that the methodology focuses on economic incidence and there are efforts to model how fiscal systems work in reality (e.g., accounting for tax informality or imperfect targeting of social programs).<sup>53</sup><sup>54</sup>

**The CEQ has been applied in over 70 countries which allows having international comparability of the results, with the latest application in Armenia in 2017.**<sup>55</sup> For Armenia, this chapter draws on the 2017 fiscal incidence study, which is the third performed under the CEQ methodology (after the 2011 and 2014 rounds), for assessing how the distributional impacts in the country change over time.<sup>56</sup>

**The CEQ methodology has limitations in some areas:** it is a static model, and does not account for behavioral, life cycle, or general equilibrium effects; it does not include taxes like the Corporate Income Tax (CIT) or public expenditure in infrastructure where methodologies are yet to be developed; and it does not account for the quality of health and education public services.

**The CEQ Methodology establishes different income concepts to assess how fiscal policy impacts individuals and households at different stages of the fiscal redistribution.** For each household, the “market income” (pre-fiscal income) is calculated, then taxes and transfers are modeled and

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<sup>52</sup> Developed by the CEQ Institute led by Nora Lustig. The latest CEQ Handbook (2018) is available at: <http://commitmentoequity.org/publications-ceq-handbook>. This annex is drawn from the methodology section in the following paper: Carrasco Nunez, H., J. Gao, D. Sharma, A. Fuchs, & M. F. Gonzalez Icaza. 2021. “Fiscal Policy, Poverty, and Inequality in Armenia.” Draft World Bank working paper.

<sup>53</sup> Under the economic incidence approach, it is assumed that the burden of direct taxes falls on employees and the burden of indirect taxes falls on consumers. This is different from statutory incidence, which refers to which agent is billing the taxes to the tax authority (e.g., firms that hire employees or sell products).

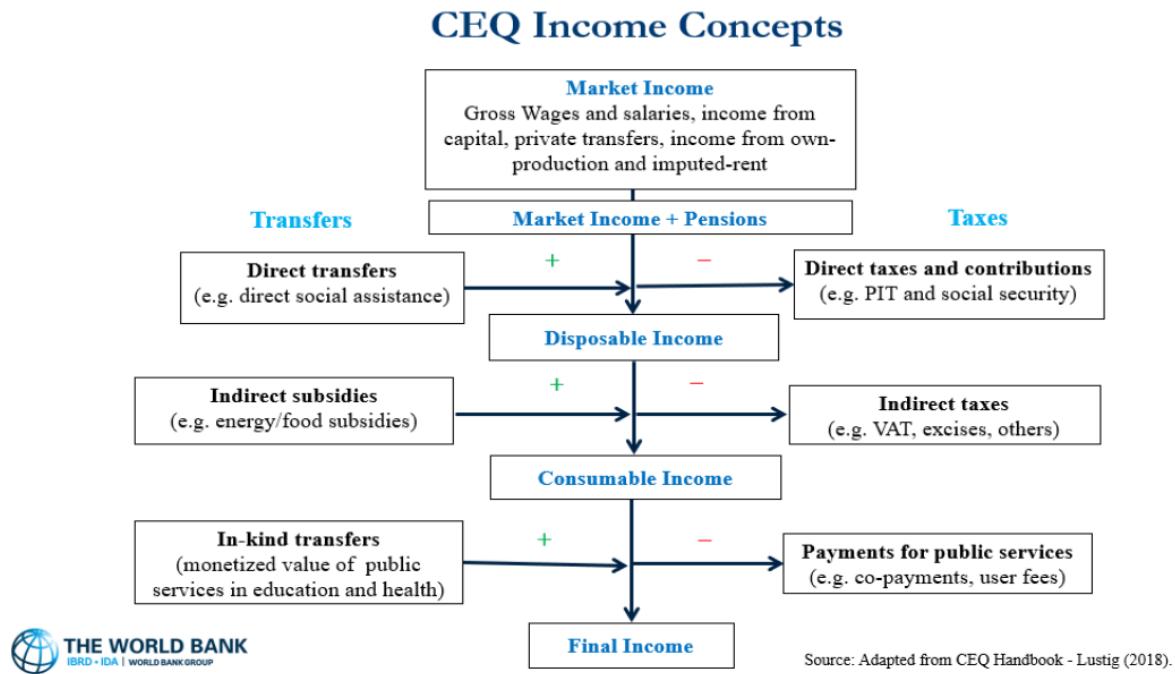
<sup>54</sup> In contrast, other fiscal incidence analysis methodologies such as EUROMOD simulate based on *de jure* assumptions (e.g., assuming perfect tax compliance and perfect take-up of social programs from eligible population).

<sup>55</sup> The Armenia analysis in this chapter is drawn from: Younger, Stephen D, and Artsvi Khachatrian. 2017. “Fiscal Incidence in Armenia.” CEQ Working Paper 43, CEQ Institute, Tulane University and World Bank.

<sup>56</sup> In Armenia, the CEQ 2017 is comparable to the CEQ 2014 since both have a similar methodological approach (e.g., building the income concepts starting from households’ consumption).

subtracted/added until reaching to the final income (post fiscal income, including in-kind transfers) (Figure 1 below).

**Figure 1: CEQ Income Concepts**



Source: Adapted from CEQ Handbook, Lustig (2018).

### Applying the CEQ Methodology in Armenia

**The fiscal incidence analysis starts with disposable income equated to the official consumption aggregate available in the ILCS.<sup>57</sup>** This allows for an estimation of poverty headcount closer to the official number for this income concept. Also, this allows for comparability with the previous CEQ 2014. Starting with disposable income, and following the logic presented in Figure 1, the following income concepts are calculated as follows:

- Net market income is calculated by subtracting direct transfers from disposable income.
- Market income plus pensions is calculated by adding direct taxes to net market income.
- Market income is calculated by subtracting income from contributory pensions from market income plus pensions.
- Consumable income is calculated as disposable income minus indirect taxes plus indirect subsidies.
- Final income is calculated as consumable income plus the (monetized) in-kind benefits from health and education services.

<sup>57</sup> Younger, Stephen D, and Artsvi Khachatryan. 2017. "Fiscal Incidence in Armenia." CEQ Working Paper 43, CEQ Institute, Tulane University and World Bank.

**The pre-fiscal income concept considered as the baseline is “market income” (e.g., income before any fiscal intervention); however, there is a different treatment of contributory and non-contributory pensions.** Contributory pensions are included as part of “market income plus pensions” (second income concept); although individuals contribute to this scheme while being formal employees (forced savings), the income they receive from contributory pensions is also co-financed by the government’s budget.<sup>58</sup> Non-contributory pensions are treated as direct transfers (fully funded by the government’s budget).

**Direct taxes were simulated in the ILCS and used as such in the analysis.** Taxable income includes income earned (wages and salaries), passive income, donations and assistance, and other income. Passive income includes capital gains, interests, dividends, royalties, income from leasing, income from insurance. Withholdings are monthly and final, and there are no personal exemptions, and retirement contributions are not tax-deductible. To calculate the PIT on employment, net wages and salaries (reported in ILCS) were first converted to gross values based on the PIT and SSC rates for each income bracket. PIT is only calculated for formal workers, who were defined as employees with a contract, members of cooperatives, employers, or self-employed with registered business; perfect compliance was assumed for these formal workers. Three PIT calculations, according to individual characteristics, were performed, based on the marginal PIT rates of the 2017 schedule: (i) PIT for public sector employees (subject to the new SSC scheme); (ii) PIT for the rest of formal employees (subject to the old SSC scheme); and (iii) PIT for formal self-employed individuals. For the PIT on passive income, the 10 percent rate was applied to the two-income sources identified in ILCS: income from the sale of valuables (car, jewelry, furniture) and income from the sale of property (interest, dividends, rent).

**Indirect taxes were modeled based on simulation.** For all taxes, net expenditures observed in the ILCS were grossed up. The analysis focuses on the direct effects of taxation; indirect effects for relevant taxes (VAT exemptions custom duties, petroleum excises) could not be modeled given the lack of an Input-Output Matrix in the country. More details about the methodology for modeling each tax are discussed below:

- **Custom Duties.** Custom duties were simulated for all taxable goods, excluding exempted items (e.g. cereals, rice, flours, books and medical products, personal care products, non-tradable services). For these items, the net expenditures observed in the ILCS were grossed up.<sup>59</sup> Since it is not possible to identify which products are imported in the ILCS, the calculation of import duties uses the import effective rate calculated based on National Accounts (equal to 2.6 percent) instead of using the statutory rate (10 percent).<sup>60</sup> The import effective rate was applied to all taxable goods. The assumption is that under price competition, the prices of similar goods (whether imported or local) will converge to similar levels in the domestic market.
- **Excises.** Excise taxes were simulated for alcoholic beverages, tobacco, and petroleum products. For alcoholic beverages, the excises are based on the purchased value (in AMD), so net expenditures were grossed up and the statutory excise rates were applied according to alcoholic beverage type. For the excises on tobacco and petroleum products, the excises are based on

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<sup>58</sup> Younger, Stephen D, and Artsvi Khachatryan. 2017. “Fiscal Incidence in Armenia.” CEQ Working Paper 43, CEQ Institute, Tulane University and World Bank.

<sup>59</sup> Since import duty is the first tax, grossing up expenditures for this tax was calculated as: Net expenditure observed in ILCS/(1+VAT rate)\*(1+import rate).

<sup>60</sup> The effective import rate was calculated by dividing total tax collection from import duties by total imports in 2017 based on official data. The fact that the Import Effective Rate is only 2.6% is equivalent to saying that only 26% of Imports are effectively taxed.

quantities; hence, the latter was estimated by dividing net expenditures by the average prices of the products and the statutory excises were applied to the estimated quantities.

- **Value Added Tax.** For the simulation of VAT, the tax base excludes the main VAT exemptions (educational expenditure, sale of jewelry, and financial services). For the VAT-liable items, the net expenditures were grossed up and the effective VAT rate was applied to these items (9.5 percent).<sup>61</sup> Using the effective VAT instead of the statutory rate means that consumption informality is considered under a “neutral distribution” assumption.

**There are two key limitations of the indirect taxes simulation.** First, the analysis focuses on direct effects, given the lack of a recent Input-Output Matrix in the country to calculate indirect effects (e.g. the price increase that taxed inputs cause in final prices); indirect effects are relevant for custom duties, petroleum excises, VAT exemptions, and VAT informality. Second, for VAT informality, the analysis is done based on the effective rate (which implies a neutral distribution of informality across income groups). While the ILCS 2017 has a place of purchase variable to proxy VAT informality, some authors have not used it because the information is missing for some items.<sup>62</sup>

**Direct transfers** were modeled based on direct identification from the self-reported information from individuals available in the ILCS. Individuals reported the income they received from the main social protection programs: Family Benefits Program, Emergency Benefit Program, child benefits, non-contributory pensions, compensation for privileges, stipendiums, and other benefits. The rent subsidy was imputed for individuals living in state/municipality/departmental rented housing; for these individuals, the imputed subsidy was 2.5 percent of total household consumption.<sup>63</sup>

**In-kind indirect transfers** were modelled based on imputation and under the “average cost” approach:

- **Health benefits.** Health benefits were simulated for inpatient and outpatient public health services. First, the average transfers by type of health service were calculated based on administrative data of government expenditures and total patients.<sup>64</sup> The results represent national averages and the monetized value of in-kind health services. Second, the health services’ beneficiaries were identified in the ILCS, based on information of access to health services.<sup>65</sup> Third, for these patients, the average benefits for inpatient and outpatient services were imputed. For the modeling of health benefits, two limitations are the following: (i) by imputing benefits only to users of health services, this analysis could be making sick individuals look better off; and (ii) the analysis is not taking into account in the model the out-of-pocket (OOP) health expenditures, which are highly relevant for the country as noted in Chapter 4.

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<sup>61</sup> The effective VAT rate is calculated based on administrative and macro data by dividing total VAT collections in 2017 by the total private consumption in the national accounts. This results in a VAT effective rate of 9.5%.

<sup>62</sup> Bachas et al. 2020. “Informality, Consumption Taxes and Redistribution.” NBER.

<sup>63</sup> Estimate of housing rent based on national accounts data.

<sup>64</sup> Health Services (General Inpatient Services, Specialized Inpatient Services, and Mother and Child medical Services) and Outpatient Services (General Medical Services, Specialized Medical Services, Dental services, Paramedical Services). This follows the MoF classification.

<sup>65</sup> In the ILCS, the classification of health services for the analysis was the following: (i) inpatient services (total hospitalizations per year and child delivery hospitalization); (ii) outpatient services (primary care visits and hospital care; children’s and Basic Benefit Package beneficiaries). Outpatient services exclude dentists, private doctors, and diagnostics, which are not usually covered by the State Health Agency.

- **Education benefits.** Education benefits were calculated for the different levels of education in the Armenian education system: pre-primary, primary, general secondary, secondary, secondary vocational, secondary professional and higher education/post-grad. For these levels of education, the average transfers were calculated based on administrative data, by dividing the government's expenditures by the total students enrolled in each level of education. Then, in the ILCS, beneficiary individuals were identified as those enrolled in public schools, for each level of education. For these individuals, the average benefits by level of education were imputed.

## Annex 1.3: Multipliers using SVAR and Local Projection Methods

### **Data Transformation**

Each variable is first adjusted for inflation by utilizing the GDP deflator, before seasonal adjustment of the variables. Variables are seasonally adjusted using a moving average process with four windows. In our estimation strategies, we transform variables in two ways. When we estimate the multipliers using SVAR methods, we log-transform the data. However, when computing the local projection methods, as Ramey and Zubairy (2015; 2018) we transform all variables using potential GDP, i.e., each variable is divided by potential GDP. Potential GDP is estimated as the GDP trend from HP filter<sup>66</sup>.

### **SVAR Estimation Method**

We first estimate the following model So, let  $Y_t = (y_{1t}, y_{2t}, y_{3t}, \dots, y_{nt})'$  denote the ( $n \times 1$ ) vector of time series. Then the model we estimate has the form

$$A Y_t = c + \xi_1 Y_{t-1} + \xi_2 Y_{t-2} + \dots + \xi_p Y_{t-p} + \Theta \epsilon_t$$

$$A Y_t = \sum_{j=1}^p \xi_j Y_{t-j} + \Theta \epsilon_t$$

Where P is the lag order. We choose the lag order based on the optimal lag selection criteria according to Schwarz's Bayesian information Criterion (SBIC). We include a trend variable to make the process stationary. The matrix  $\Theta$  is a matrix of the relationship between structural shocks, while matrix  $A$ , is a structural matrix representing the relationship between included endogenous variables. We employ a short-run (Cholesky) identification strategy and impose contemporaneity on the  $\Theta$  matrix. That is, the ordering of the variables determines how a shock to each variable affects the others in the system. We estimate a three-variable model for our spending shocks ordered as  $[S_t, GDP_t, T_t, \Delta RER_t]$ , where  $S_t$  is the  $i$ -th spending instrument and  $\Delta RER_t$  is the change in ARM to USD.. When we estimate tax multipliers, we estimate a four-variable model ordered as  $[E_t, GDP_t, T_t, \Delta RER_t]$ ,  $E_t$  is the total government expenditure. This ordering of variables follows from David (2017).

Since variables are log-transformed, they become elasticities. Suggested transformation back is to utilise the following equation

$$FM_{i,j} = \Gamma_{i,j}^{-1} IRF_{i,j}$$

$$FM_{i,j} = \frac{GDP}{i} \cdot \frac{\Delta \ln(GDP)}{\Delta \ln(i)}$$

Here  $FM_{i,j}$  is the fiscal instrument in other words  $i$  -fiscal-policy-instrument multiplier of  $j$ -economic-output component such that  $i =$  (Public investment, expenditure, current expenditure, capital expenditure, government consumption, taxes, defence expenditure, public expenditure etc..) and  $j =$  GDP.

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<sup>66</sup> Ramey and Zubairy (2018) utilises an  $n$ -th degree polynomial to obtain potential GDP. Due to data limitation, we are only able to utilise the HP-Filter.

$IRF_{i,j}$  is the orthogonal impulse response function (or cumulative orthogonal impulse response function) of GDP to a shock in  $i$ -fiscal-policy-instrument. Shock identification is done via Cholesky – so we have short-run identification<sup>67, 68</sup>. Similarly,  $\Gamma_{i,j}^{-1} \equiv \frac{GDP}{i}$  is the averaged ratio of  $i$ -fiscal-policy-instrument to GDP. As discussed in Ramey and Zubairy (2015; 2018) multipliers estimated using this transformation are subject to measurement problems as the ratio of GDP  $i$ -fiscal-policy-instrument is not constant through the sample period of estimation. Ramey and Zubairy (2015) argue that given the dynamic economic environment, the multipliers that are of importance to fiscal authorities should be estimated as the cumulative multipliers, hence, we report both direct and cumulative multipliers. The intuition is simple, the effects of government fiscal policies build up over time, especially government spending, thus, one should not consider the peak or average responses rather the cumulative responses.

### ***Local Projection Methods.***

As a robustness check, we also estimate the multipliers using Local Projection Methods developed by Jorda (2005). Under the local projection method, multipliers are obtained directly without need for transforming variables. In this regard we follow Ramey and Zubairy (2018), the Local Projection equation is given as

$$Y_{t+h} = \alpha_h + \sum_{i=1}^n \eta_{ih} X_{t-i} + \beta_h \text{shock}_t + \mu_{t+h} \quad h = 0, 1, 2, \dots$$

The local projections identify impulse response functions from consecutive regressions over the different horizons,  $h$ . Here  $Y$  is our variable of interest, GDP, while  $X$  is a vector of control variables that includes three lags of GDP, 2 lags of changes in the real exchange rate (RER) and the  $i$ -fiscal-policy-instrument. We compute the cumulative fiscal multipliers utilising instrumental variables approach in our local projections. That is, we instrument  $i$ -fiscal-policy-instrument with the identified  $i$ -fiscal-policy-instrument shock. We estimate the following equation using  $\text{shock}_t$  as an instrument for  $\phi_h \sum_{j=0}^h i_{t+j}$

$$\sum_{j=0}^h Y_{t+j} = \alpha_h + \eta_h X_{t-1} + \phi_h \sum_{j=0}^h i_{t+j} + \mu_{t+h}$$

The shocks in the local projection are identified using a Blanchard-Perotti identification<sup>69</sup>, which is a simple orthogonalized  $i$ -fiscal-policy-instrument. In other words, we collect the residual from this equation of  $i$ -fiscal-policy-instrument

<sup>67</sup> Since we have Cholesky identification in our SVAR the ordering of the 3-variables SVAR are as follows  $i$ -fiscal-policy-instrument, GDP, and changes in the RER, with a time trend included. This is when we look at expenditure multipliers. When we look at tax multipliers, we have a 4-variable VAR with the ordering of the variables now: total government expenditure, GDP,  $i$ -fiscal-policy-instrument (taxes), and changes in the RER. As a result of the ordering, the impact multiplier effect for taxes starts at period 1 while that of expenditure starts at period 0.

<sup>68</sup> The lag length of the SVARs were chosen using Schwarz-Bayesian Information Criterion (SBIC), and lag lengths vary from 2 – 6 depending on the equation.

<sup>69</sup> Blanchard and Perotti (2002).

$$i_t = i_{t-p} + GDP_t + GDP_{t-p} + RER_t + RER_{t-p}$$

Here  $p$  is the number of lags (we choose 4<sup>70</sup>).

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<sup>70</sup> This follows from David (2017) and Ramey and Zubairy (2015).

## Annex 1.4: Data Envelopment Analysis (DEA)

The explanation of the DEA method below draws heavily on J. Kapsoli and I. Teodoru, “Benchmarking Social Spending Using Efficiency Frontiers,” IMF Working Paper 17/197, September 2017.

**Parametric and non-parametric represent the two families of methodologies used in the literature to estimate technical efficiency.** Each of these methodologies has its strengths and weaknesses. Parametric methods require several assumptions on the errors' distribution and the functional form underpinning the model. At the same time, parametric methods assume a stochastic relationship between inputs and outputs. This enables the analyst to separate from the efficiency estimation the part that is real inefficiency and the part which is explained by measurement errors or other noise in the data. The stochastic frontier model (SFA) is the most well-known parametric method available. Non-parametric methods, on the other hand, are based on mathematical programming. They do not require any distributional assumptions or assumptions relative to functional form of the transformation relation between outputs and inputs. However, non-parametric models do not include randomness. As a result, all the data by construction provides information on the inefficiency or the technological frontier. This assumption makes non-parametric models very sensitive to the presence of outliers or noise in the data.

**Data development analysis (DEA) is the most widely used non-parametric method in the benchmarking literature.** DEA is a mathematical programming method that can solve the two main tasks involved in a benchmarking exercise by: (a) calculating the frontier based on the best performer units; and (b) evaluating performance relative to this estimated frontier. A DEA model requires four basic assumptions, namely: (i) free disposability; (ii) convexity; (iii) returns to scale; and (iv) additivity.

**The DEA model has several drawbacks.** DEA is a purely deterministic method which ignores the presence of noise in the data such as measurement errors. This is particularly problematic when the units of analysis are as ‘large’ as countries. Data challenges in EMDE contexts make this weakness a substantial limitation on the reliability of DEA results. Second, DEA estimations are biased as they estimate the efficiency frontier based on ‘best performer’ units, which do not necessarily represent the true frontier.

**Bootstrapping can be used to check the robustness of results from DEA analysis.** Following Simar and Wilson (1998, 2000), bootstrapping may be used to assess the sensitivity of the DEA analysis to sampling variations underpinning the estimation of the true frontier. Bootstrapping may enable the analyst to correct some of the bias in the estimated efficiency scores and calculate confidence intervals.

## Annex 1.5: Defining Budget Rigidity

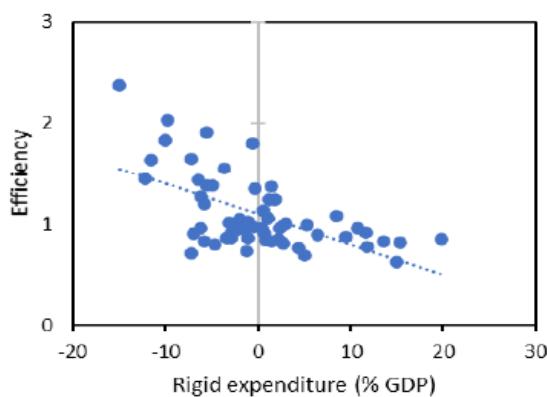
The degree of “rigidity” in a government’s budget can be analyzed to assess how much spending adjustments it can realistically undertake. Cross-country analysis of budget data over the last few decades finds that different spending areas have varying levels of rigidity: a high-rigidity expenditure area means that governments, once committed, are more or less likely to have to continue spending on that area. This rigidity stems from institutional, legal, contractual, or other constraints that limit the ability of governments to change the size and composition of the budget (World Bank 2020). These constraints include demographic factors such as an ageing population, budget rules that predetermine the level of certain types of spending, and political pressures on governments to increase the size of the bureaucracy.

**High-rigidity expenditure areas** typically include the wage bill, public debt servicing costs, pensions, subnational transfers, and spending on defense and courts. **Medium-rigidity expenditure areas** typically include goods and services in health and education, subsidies to production, and capital expenditures in education and health. **Low-rigidity areas** typically include most capital expenditures, which governments are often more likely to wind down or delay in response to budget pressures or cashflow issues.

World Bank analysis finds that high budget rigidity is associated with other weaknesses in public finance, including lower public sector efficiency (Figure 1). Countries with higher levels of budget rigidity tend to spend more, have higher tax rates, have reduced fiscal space, and are also associated with lower efficiency of public spending overall.<sup>71</sup>

**Figure 1. Public Sector Efficiency and Expenditure Rigidity**

Percentage of GDP and efficiency index (0-3)



Source: Herrera, Santiago; Olaberria, Eduardo. 2020. Budget Rigidity in Latin America and the Caribbean: Causes, Consequences, and Policy Implications. International Development in Focus. World Bank.

<sup>71</sup> Herrera, Santiago; Olaberria, Eduardo. 2020. “Budget Rigidity in Latin America and the Caribbean: Causes, Consequences, and Policy Implications.” *International Development in Focus*. World Bank.

# **Chapter 2: Improving the Efficiency of Capital Spending**

## Chapter 2: Improving the Efficiency of Capital Spending

### Section 2.1: Introduction

- 83. How can Armenia improve the efficiency of its capital expenditures to meet its strategic priorities?** This is the main question that this chapter will look to answer. Improving the efficiency of capital spending is vital given the fiscal constraints and rising spending pressures highlighted in Chapter 1.
- 84. To answer this question, the chapter is structured as follows:** Section 2.2 provides an overview of public capital expenditure trends and their links to economic growth and infrastructure outcomes. Section 2.3 evaluates public investment management (PIM) processes that may be driving public capital expenditure inefficiencies, focusing on the upstream processes of planning and budgeting. Section 2.4 provides an overview of project implementation, focusing on delays in large public infrastructure projects. Section 2.5 concludes with recommendations. This chapter builds on previous assessments of Armenia's PIM system, notably the 2018 IMF Public Investment Management Assessment (PIMA) (Box 2). However, the chapter goes beyond the PIMA in identifying the specific data gaps for domestic projects, analyzing the foreign financed capital project portfolio, and updating the analysis of the planning and budgeting framework, e.g., by adding discussion of the new PIM decree enacted in 2023.
- 85. The analysis of capital expenditure efficiency is limited by significant data constraints.** Critical data gaps include the lack of data on maintenance spending by sector, insufficient historical detail on allocations of capital projects within education and health, and the lack of identifying codes, asset registers, and centralized data on implementation progress for domestically financed projects. These data limitations prevent a comprehensive analysis of allocative efficiency of capital expenditures across and within sectors and an in-depth assessment of the efficiency of project implementation.<sup>72</sup>

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<sup>72</sup> It should also be noted that the chapter's scope is limited to capital expenditure by the central government and does not consider spending by state-owned enterprises or subnational units, which however do not account for a significant share of overall capital expenditures.

**Box 2: Findings from the Public Investment Management Assessment (PIMA 2018)**

The PIMA highlights the binding constraints that exist at the time of selection, appraisal, budgeting for investment, and oversight, with funding less of a constraint (Figure B1-1). As the pipeline of “bankable” projects increases, the government will need to find effective mechanisms to ensure funding within fiscal constraints. A summary of the main findings of the previous assessment is presented in Figure B1-1, across the components of the PIM cycle depicted in Figure B1-2.

**Figure B1-1. PIMA diagnostic findings**



Source: IMF 2018

**Figure B1-2. A Framework for Reviewing Public Investment Management**



Source: Rajaram et. al. (2014), Kim et. al. (2020)

**Table B2-1. Summary of findings from PIMA, 2018**

PIM cycle function	Summary
Planning /strategic guidance	Armenia has developed many strategic documents both at the national and sector levels. However, there is no clear, comprehensive strategic planning framework, compromising results and achievements. These strategies do not adequately guide investment decisions.
Identification	No systematic mechanism exists to identify projects and there is a lack of a centralized pipeline of projects that could be used for appraisal and budgeting processes.
Pre-appraisal /budgeting	Because there is no standardized requirement for technical analysis of capital projects, line ministries may follow different appraisal practices. Investments are annually appropriated. Total project costs are not presented in budget documents.
Appraisal	Standardized costing and technical analysis for domestic projects are required by law. However, this falls short of a comprehensive appraisal process. Appraisal of large investment projects is primarily undertaken to meet donor requirements.
Budgeting and procurement	The 2017 Law on Procurement reflects good principles such as value for money, equal rights and nondiscrimination, competition, transparency and openness, and proportionality in the procurement process. Effective implementation of the law can be supported by further streamlining the procurement process and fully applying e-procurement methods. Cashflow forecasts are made for the year for projects funded by the general state budget.
Supervision	The MoF monitors annual project costs and physical progress but has limited power to control the implementation of major projects. Effective monitoring is also constrained by a limited view (lack of data integration) across the lifecycle of a given project.
Completion	Large projects suffer from lengthy time and high cost overruns. The drivers of this are complex and include upstream weaknesses in strategic guidance/identification, as well as downstream weaknesses that need to be better understood.
Asset O&M	No registry of assets. Maintenance spending has been well protected during budget execution. However, the maintenance budget has not grown sufficiently to cover the needs of Armenia's capital stock.

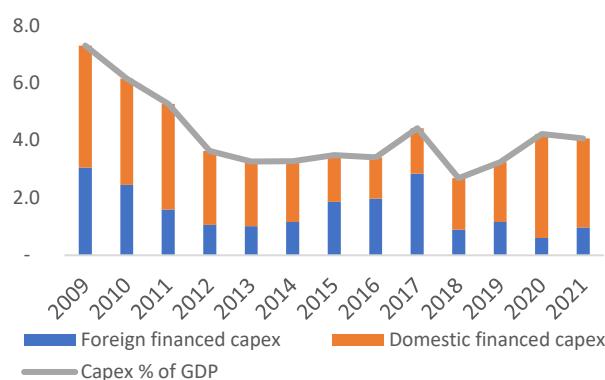
Source: IMF. 2018. Armenia Public Investment Management Assessment. Technical Assistance Report. Washington, DC: IMF.

## Section 2.2: Capital Expenditure, Economic Growth, and Infrastructure Service Delivery

Section 2.2.1: Capital expenditure levels have remained stagnant, and maintenance spending may be lower than needs

**86. Public capital expenditures have remained stagnant as a share of GDP and declined as a share of the budget.** As highlighted in Chapter 1, Armenia enacted a Public Debt Law in 2008 that led to a period of fiscal consolidation as debt levels exceeded statutory thresholds. Fiscal consolidation was particularly sharp for capital expenditures, which fell from 7 percent of GDP in 2009 to 3 percent of GDP in 2013.<sup>73</sup> Overall, government expenditures have since increased as a share of GDP. However, this has been driven by recurrent expenditures, with capital expenditures picking up only marginally to around 4 percent of GDP as of 2021 (Figure 18). As a result, the share of capital expenditures in the budget has declined significantly from 20 percent in 2010 to 12 percent in 2021 (Figure 19).

**Figure 18. Capital expenditures as share of GDP**  
Percent of GDP



Source: MoF and authors' calculations  
Note: capex = capital expenditure

**Figure 19. Capital expenditures as share of the budget**  
Percent of budget



Source: MoF and authors' calculations

**87. Capital expenditures are predominantly domestically financed.** More than half of public capital expenditures have consistently been domestically financed, except in 2015–2017, when externally financed capital expenditures accounted for almost two-thirds of total public capital expenditure (Figures 18 and 19). In 2020 and 2021, domestic financing accounted for 85 percent and 76 percent of total public capital expenditure, respectively.<sup>74</sup> The shift away from foreign-financed capital expenditure can in part be attributed to a reduction in debt levels to meet the statutory levels defined in the fiscal rule.

<sup>73</sup> Note that all figures here are for general government spending.

<sup>74</sup> State-owned enterprise (SOE) capital expenditure and PPPs are not covered in the chapter. Most SOE capital expenditure is financed through on-lending through the state budget and not classified directly as capital expenditure in budget documents. On-lending to SOEs for their capital expenditures is limited and does not account for a significant share of total public capital expenditures.

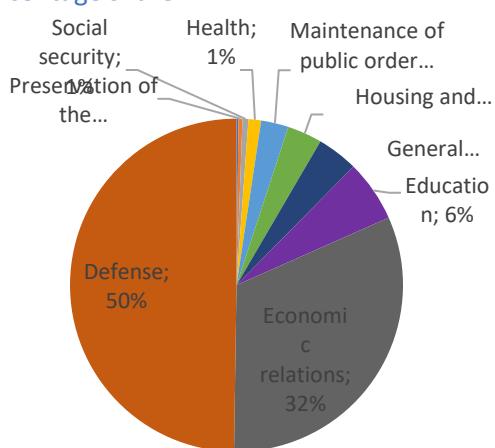
**88. Domestically financed capital expenditures have been concentrated in the defense and economic relations sectors.<sup>75</sup>** In 2021, the defense sector accounted for half of this spending, with economic relations sectors accounting for nearly a third of total capital expenditures (Figure 20).<sup>76</sup> On the other hand, capital expenditures geared towards human capital formation via the education and health sectors were lower as a share of the total, at 6 percent and 1 percent, respectively.

**89. Foreign-financed capital expenditure is channeled mainly towards the transport and energy sectors.** As of early 2022, 27 percent and 18 percent of foreign-financed capital expenditures was focused on the transport and energy sectors, respectively (Figure 21). Like domestically financed capital expenditure, a relatively small share of foreign-financed capital expenditure is targeted toward health and education.

**90. The sectoral distribution of capital spending suggests that it is not sufficiently calibrated to close infrastructure gaps (further described in Section 2.2.3).** Foreign-financed capital spending is aimed at addressing critical infrastructure shortages in transport and energy. However, lower capital spending allocations to health and education may be a concern for example, previous analysis has indicated that inadequate budget funding for capital investments (including maintenance costs) may be negatively impacting the quality of service delivery in health.<sup>77</sup> However, the lack of historical disaggregated spending data for capital expenditures within the education and health sectors prevents a comprehensive analysis of whether capital expenditures are at adequate levels and addressing key infrastructure gaps.

**Figure 20. Capital expenditures by functional classification, 2021 (State Budget)**

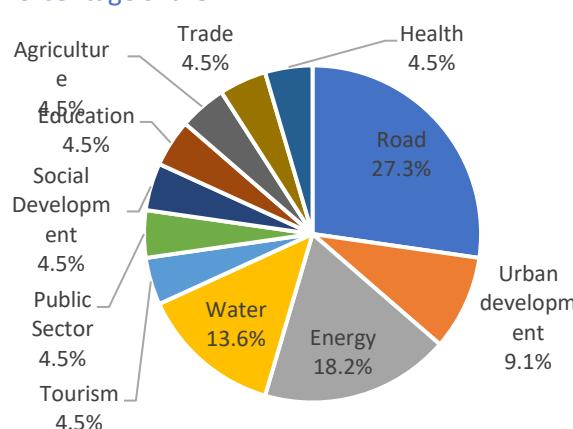
Percentage share



Source: MoF and authors' calculations

**Figure 21. Sectoral distribution of large foreign-financed projects, 2022 (State Budget)**

Percentage share



Source: MoF and authors' calculations

<sup>75</sup> Budget expenditures disaggregated by functional or economic classification became available only in 2021, which limits the focus for a longer period before 2021. Moreover, detailed data (capital expenditures by sectors) are available only for the state budget.

<sup>76</sup> Economic relations sectors include a wide range of sectors such as transport, commercial, and labor relations of a general nature, agriculture, fuel and energy, mining, industry, and construction.

<sup>77</sup> World Bank. 2020. Reforming Public Financial Management for Health in Armenia. Washington, DC: World Bank.

**91. Adequate maintenance is vital to ensuring the quality of public infrastructure services and averting a premature depreciation of non-financial asset stocks.** The level of investment needed to maintain the infrastructure in good working order can vary depending on a number of factors, including the age and condition of the infrastructure and the types of assets in the public stock.<sup>78</sup> Global estimates suggest that failure to perform routine maintenance would reduce the useful life of installed capital and increase overall capital replacement costs by at least 60 percent.<sup>79</sup> Growing environmental stresses such as climate change amplify the case for strengthening resilience through better maintenance practices.

**92. Without a registry of public assets and data on current levels of maintenance spending, it is not possible to assess whether Armenia is adequately investing in its maintenance needs.** Data on overall level of maintenance spending are not currently available, which is a significant data gap. In the absence of such information, this chapter relies on international benchmarking to highlight what may be the adequate level of spend for Armenia. Some asset management practices recommend using specific ratios or percentages of replacement asset value (RAV) to determine appropriate levels of investment in maintenance. For example, organizations may use a rule of thumb that suggests investing 2-4 percent of RAV annually in maintenance and repair to keep assets in good condition and avoid costly replacements down the line.<sup>80</sup> A lower 2 percent bound implies that Armenia would have needed to spend around AMD 107 billion in 2020 based on IMF investment and capital stock dataset estimates of the public capital stock in 2019. This is about 5.6 percent of overall expenditures and over a third of capital expenditures in 2020. Maintenance obligations are likely to increase further in line with the growing investment pipeline. Using an assumed maintenance spending of 2 percent of capital costs, additional maintenance obligations associated with new capital investments until 2024 (under the MTEF) are estimated to be around USD 25 million (or just over AMD 10 billion).

**93. The process for prioritizing and managing maintenance spending varies across sectors, with some more advanced than others.**<sup>81</sup> In the roads sector, the Prospective Development Strategy (PDS) for 2014-2025 stipulates a percentage of GDP for road maintenance, which is backed by legislation. Spending is also facilitated by an asset registry and a survey of road conditions managed by the Armenian Road Directorate. This survey is used to inform the prioritization of

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<sup>78</sup> Ideally, maintenance costs should be considered during the appraisal that informs the public investment decision. A cost-benefit analysis should account for changes in the maintenance requirements depending on the use of the asset and its age. OECD. 2011. "OECD Framework for the Governance of Infrastructure." Paris: OECD.

<sup>79</sup> Rozenberg, Julie, and Marianne Fay, eds. 2019. "Beyond the Gap: How Countries Can Afford the Infrastructure They Need While Protecting the Planet." Sustainable Infrastructure Series. Washington, DC: World Bank.

<sup>80</sup> For example, the International Infrastructure Management Manual published by the Institute of Public Works Engineering Australasia (IPWEA) sometimes used as a guide for infrastructure asset management recommends investing 2-4% of RAV or current replacement cost (CRC) annually in maintenance and repair to ensure the long-term sustainability of infrastructure assets. Rozenberg and Fay (2019) estimate that globally, between 1 and 3 percentage points of GDP of annual maintenance spending will be needed to reach the Sustainable Development Goals in key infrastructure sectors by 2030. In the transport sector, they point to maintenance costs that are even higher than the costs of new investment in countries that already have large transport networks, such as those in the former Soviet Union. Failure to perform routine maintenance would increase overall capital and rehabilitation costs by 50 percent.

<sup>81</sup> Disaggregated data on maintenance spending by sector were not available. Therefore, the sectoral efficiency of maintenance spending allocations could not be examined.

maintenance projects.<sup>82</sup> At the same time, Armenia lacks a viable costing strategy to adequately inform a whole-network approach to maintenance.<sup>83</sup> The management of maintenance contracts may also not be contributing to cost-effectiveness of current maintenance spending.<sup>84</sup> In addition, there does not appear to be any evidence-based dialogue within the annual and medium-term budgeting process between MoF and the Ministry of Territorial Administration and Infrastructure (MOTAI) to capture the losses associated with inadequate maintenance expenditures. In the health and education sectors, maintenance spending is not backed by legislation, and there is limited evidence of a clear funding and prioritization mechanism.<sup>85</sup>

Section 2.2.2: Capital spending levels are contributing to declining public capital stocks, which in turn may be impacting growth

**94. Public capital spending can contribute to higher economic growth, but this is not necessarily the case in every country.** Public capital spending leads to a higher public capital stock, and in turn, empirical evidence points to an overall positive (but concave) relationship between the rate of change of public capital stock and economic growth in lower-income and middle-income countries.<sup>86</sup> However, it is not necessary that an increase in public capital spending should lead to economic growth. For example, counter-cyclical investments in response to the 2008 Global Financial Crisis resulted in growth in the public capital stock, which was associated overall with a pick-up in GDP growth (Figure 22). However, this association was stronger in MICs than in LMICs or LICs. This could be due to weaker PIM systems in LICs, which may lead to greater inefficiencies.<sup>87</sup> Additionally, the impact of a fiscal stimulus over the long-term is less clear.<sup>88</sup> The need to offset a short-term shock can lead to poor sector or geographic targeting, which contributes to capital stock in the near term without affecting growth in the long-term. Public investment can also crowd out private investment by raising the cost of financing on account of unsustainable debt-financed public investment programs.

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<sup>82</sup> IMF PIMA (2018). However, data analysis during the PER suggests that this asset registry covers only a subset of the road network and may not be adequately updated and that applied analytics could be improved to provide for more comprehensive and prioritized maintenance budgeting as part of medium-term expenditure frameworks (see Box 2).

<sup>83</sup> The last comprehensive survey of the road network was supported by the World Bank in 2018-2019 for the primary road network (Republic of Armenia 2022:32, Figure 7). Maintenance Recommendations: For 2016-2022, the World Bank recommended at least AMD 42 million for interstate and national roads. These projects indicated an initial need to address severe periodic maintenance gaps (minor repair or rehabilitation and capital repair or reconstruction) and then transition to a more balanced flow of routine maintenance.

<sup>84</sup> The maintenance of interstate and national roads is carried out under contracts to the current 37 private contractors selected by competitive tender for sections of about 100 km for five years. Contracts are input-based to provide maintenance but are not performance-based in the sense of ensuring high standards and cost-effectiveness in the long term (see Republic of Armenia 2022:33).

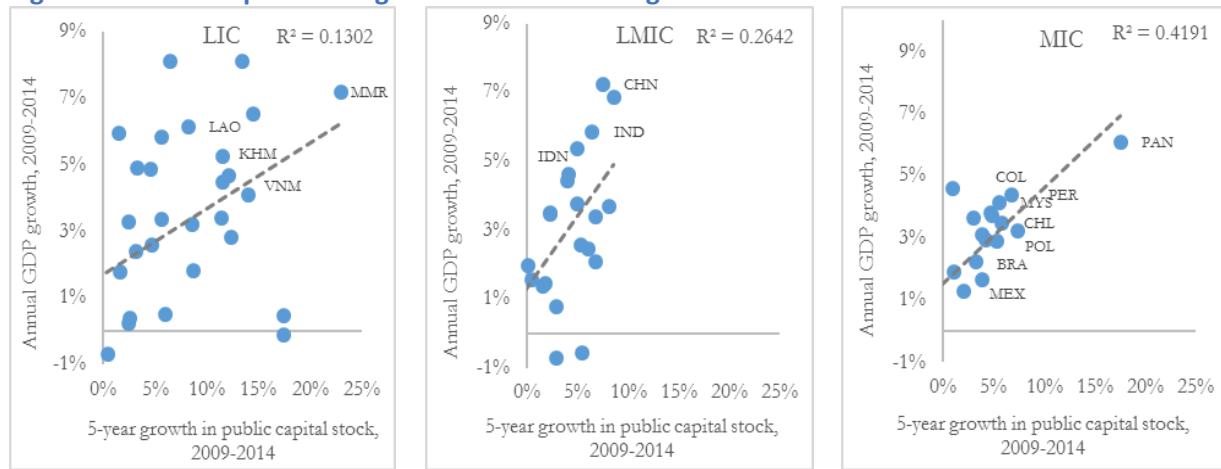
<sup>85</sup> All publicly owned healthcare providers submit annual reports to their management. These reports include summary information on fixed assets such as the initial and residual values of land, buildings, vehicles, and equipment. However, they are not consolidated at the national or regional levels.

<sup>86</sup> IMF. 2010. "Public Capital and Growth." Washington, DC: IMF.

<sup>87</sup> World Bank. 2014. "The Power of Public Investment Management: Transforming Resources into Assets for Growth." Washington, DC; World Bank.

<sup>88</sup> World Bank. 2008. "Fiscal Policy Responses to the Current Financial Crisis: Issues for Developing Countries." Washington, DC: World Bank.

**Figure 22. Public capital stock growth and economic growth 2009-2014**

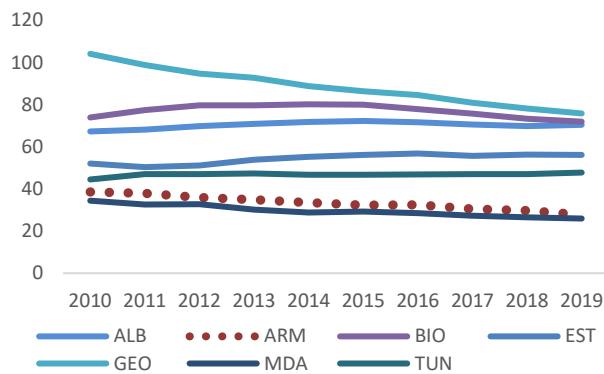


Source: IMF Investment and Capital Stock dataset, Penn World Tables 9.0

95. In Armenia, growth multiplier estimates suggest that public capital expenditures are positively correlated with economic growth (see Chapter 1 for a detailed discussion of multipliers). Growth multipliers associated with public capital expenditures are significantly higher than those associated with current expenditures over the short and medium terms. Additionally, the peak effect of capital expenditures on GDP is after about 10 quarters, which suggests that the benefits of public capital spending are not limited to the short to medium term.
96. Considering its positive impact on growth in Armenia, the stagnant level of public capital expenditures (which is well below peers, as noted in Chapter 1) is of concern. The stagnant level of capital expenditures is contributing to a declining public capital stock, which is estimated to have declined from 39 to 28 percent of GDP between 2010 and 2019 (Figure 23).<sup>89</sup> The value of the public capital stock measured as a share of GDP is lower than among nearly all selected peers and does not compare favorably with the country's income level or with peers. However, infrastructure quality is perceived to be higher than among peers (Figure 24) and high relative to the level of per capita public capital stock (Figure 25).

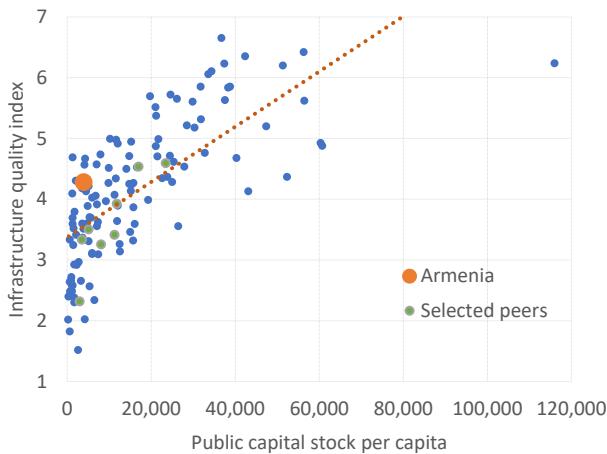
<sup>89</sup> IMF Investment and Capital Stock Dataset (ICSD)

**Figure 23. Public capital stock**  
Percent of GDP, Constant 2017 PPP USD



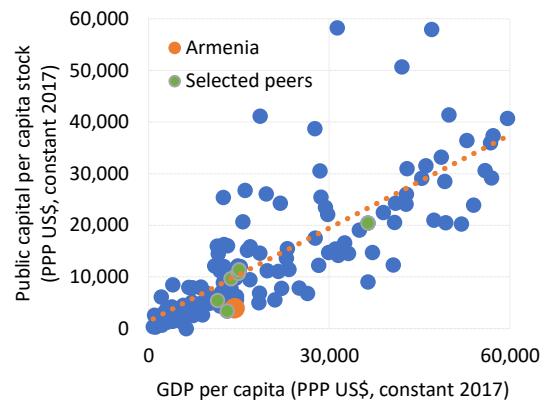
Source: IMF Investment and Capital Stock Dataset

**Figure 25. Public capital stock versus infrastructure quality index, 2019**  
Infrastructure index (0-7) and constant 2017 PPP USD

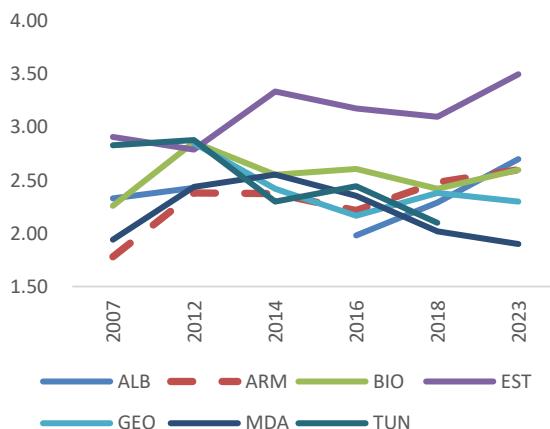


Source: IMF Investment and Capital Stock Dataset (ICSD),  
World Economic Forum Global Competitiveness Index,  
World Bank staff calculations

**Figure 24. Public capital stock versus income per capita. Constant 2017 PPP USD**



**Figure 26. Logistics performance index**  
Quality of trade and transport-related infrastructure (1=low to 5=high)



Source: World Development Indicators

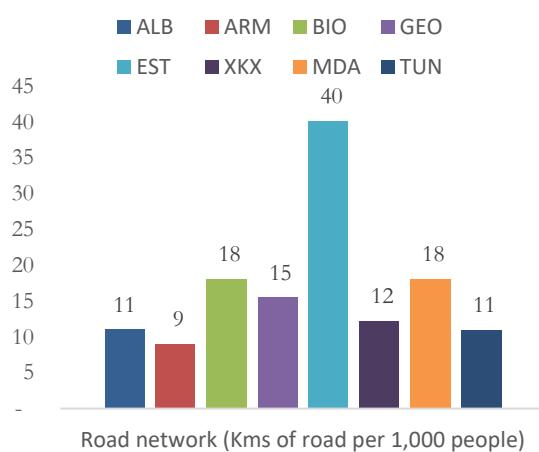
**97. The decline in the capital stock may be even higher than indicated because of climate vulnerabilities that accelerate depreciation.** A significant number of settlements, roads, bridges, reservoirs, and other infrastructure are in landslide-prone zones and are at risk of further damage. Climate-induced hazards such as droughts, floods, hail, and landslides occur frequently and over the past 25 years have caused more than USD 1.5 billion in assessed damage and losses, equivalent to average annual damage and losses of more than USD 76.5 million (equal to 0.6 percent of 2021 GDP).

Section 2.2.3: Infrastructure gaps relative to peers are evident, and capital expenditures may not be efficiently addressing these gaps

**98. A declining public capital stock is also reflected in infrastructure service delivery, with evident infrastructure gaps in key sectors such as health, digital connectivity, transport, and energy.**

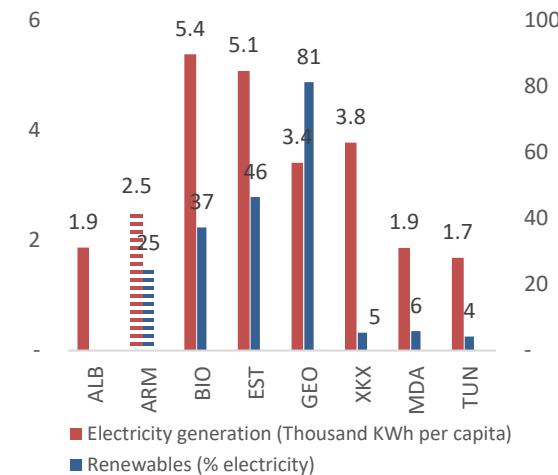
Trade and transport-related infrastructure is seen to have improved and is on par with most peers (Figure 26).<sup>90</sup> However, there are fewer kilometers of road per 1,000 people in Armenia than in any of the sampled peers (Figure 27).<sup>91</sup> This may be of concern as Armenia is landlocked and reliant on a functioning road network to move goods, people, and capital to access ports and to link communities to economic centers. Armenia also lags in the production of electricity, generating around 2,500 kilowatts per person, which is lower than peers such as Bosnia and Herzegovina, Serbia, and Georgia (Figure 28).<sup>92</sup> Despite the penetration of mobile phones, internet connectivity remains below peers, and the use of information and communication technologies (ICTs) is perceived to be the lowest among the selected peers (Figures 29 and 30).

**Figure 27. Road network**  
Km of road per 1,000 people



Source: World Development Indicators, Rural Access Index (2020)

**Figure 28. Electricity production (2021)**  
Thousand KWh per capita



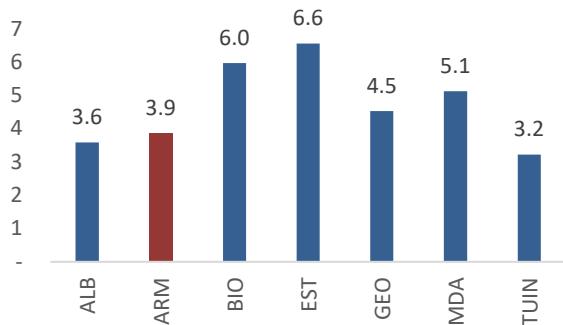
Source: BP Statistical Review of World Energy; Ember  
Note: Kosovo (XKK) is 2020, not 2021

<sup>90</sup> The data are from the Logistics Performance Index survey conducted by the World Bank in partnership with academic and international institutions, private companies, and individuals engaged in international logistics. Respondents evaluated the quality of trade- and transport-related infrastructure (for example, ports, railroads, roads, and information technology) on a scale ranging from 1 (very low) to 5 (very high). Scores are averaged across all respondents.

<sup>91</sup> Kilometers of road per population is not an ideal measure of connectivity as it does not account for density of population in different parts of the country. Nonetheless, in the absence of spatial analysis, it may broadly indicate the level of road infrastructure available to the population.

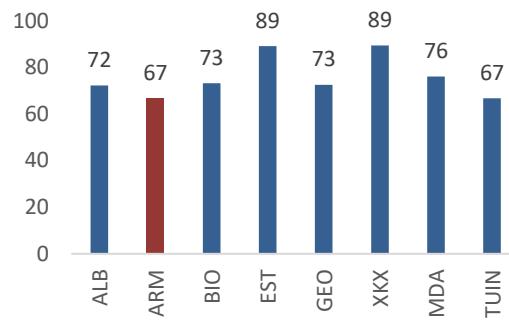
<sup>92</sup> About 25 percent of electricity production can be considered renewable, being generated as hydro-power.

**Figure 29. Use of ICT. Index (1-7)**



Source: World Economic Forum Global Competitiveness Index, 2017. Note: The index is composed of several indicators that cover internet users, fixed-broadband and fiber internet subscriptions, internet bandwidth, mobile telephone subscriptions.

**Figure 30. Internet connectivity. Percent of population using the internet**



Source: World Development Indicators. Note: All for the year 2020 except for ARM and TUN (2019), XKX (2018), and MDA (2017).

**99. Capital spending does not seem efficiently targeted to address these infrastructure gaps, but this cannot be conclusively established because of data constraints.** Comprehensively assessing the allocative efficiency of capital spending in addressing infrastructure gaps is challenging given limited availability of data on capital spending projects within sectors and the lack of available data on maintenance spending. Estimates of the investment efficiency frontier mapping infrastructure access and infrastructure outputs indicate efficiency gaps (as highlighted in Chapter 1). However, as highlighted in section 2.2.2, perceptions of infrastructure quality are higher than among peers and higher than predicted by public capital stock levels (Figure 25).

**100. The innovative use of data and new tools can help Armenia assess the efficiency of capital spending in addressing critical infrastructure gaps and vulnerabilities.** Cloud-based capabilities such as the Geospatial Planning and Budgeting Platform (GPBP) (Box 3) are one such tool. The GPBP can also be used to complement public spending data to address some of the existing weaknesses in project identification and pre-appraisal (as highlighted in Table B2-1). Annex 2.1 provides case study examples of the use of cloud-based analytics to help address infrastructure gaps in the health and transport sectors.

### Box 3. The Geospatial Planning and Budgeting Platform

The Geospatial Planning and Budgeting Platform (GPBP) is a set of cloud-based capabilities, including analytical frameworks, code, and data assets, designed to provide decision support for improving public infrastructure asset and investment management. Cloud-based deployments make GPBP decision support capabilities both replicable and scalable across national and subnational areas of interest.

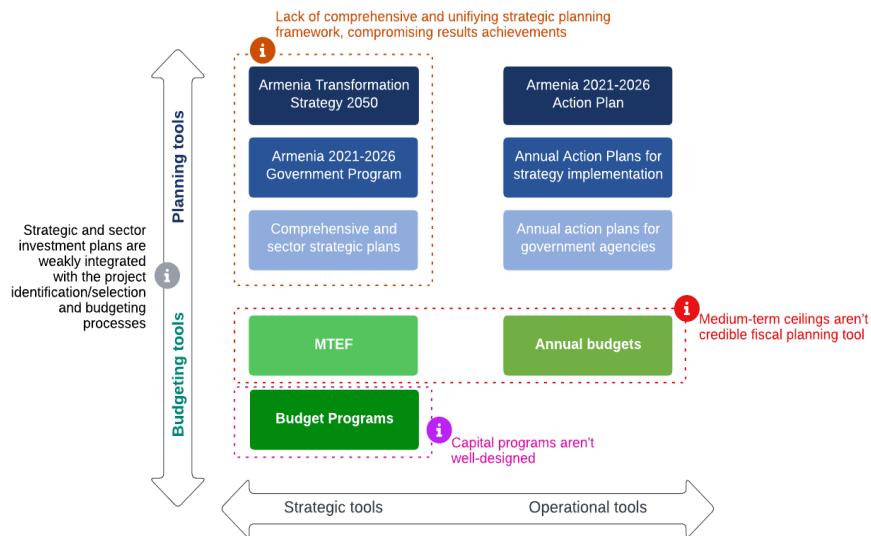
The platform helps generate a summary of data visualizations focused on critical infrastructure access, initially with a focus on healthcare and road transport access. A GPBP can be generated based on an initial set of 10 global data layers or feeds: (i) territorial administration structure; (ii) population distribution; (iii) road networks; (iv) health facilities; (v) urbanization; (vi) terrain; (vii) socioeconomic activity (nightlights); (viii) climate; (ix) mobility; and (x) air quality.

A key objective of the GPBP is to offer initial key decision support insights into the extent to which infrastructure assets provide inclusive services and may be subject to resilience risks from climate change conditions. Above all, it should help the authorities prioritize where better availability of and access to key data (including digital mappings of key infrastructure networks) would provide basic but significant decision support value to help optimize and better track resource allocations.

## Section 2.3: Planning and Budgeting for Capital Expenditures

- 101. This section examines weaknesses in the upstream PIM processes of capital expenditure planning and budgeting, which may be contributing to capital expenditure inefficiency.** Weaknesses in these upstream PIM processes have been previously identified as binding constraints that hold back the performance of the PIM system (See Box 2).
- 102. The section emphasizes that existing strategic planning and budgeting processes are compromising the ability of the PIM system to deliver results.** The primary weaknesses are summarized in Figure 31. The overall strategic framework lacks clarity and consistency across different planning documents, several sectoral plans lack clearly defined performance indicators, and priorities are often not costed. This makes it challenging to identify sectoral investment priorities and to reflect these priorities adequately in the Medium-Term Expenditure Framework (MTEF) and the annual budget. The design of capital programs appears to be weak and is hindering project performance, which cannot be tracked effectively due to data gaps in reporting and monitoring. A full assessment of program-based budgeting (PBB) is beyond the scope of the PER but may be covered in subsequent expenditure reviews.

**Figure 31. Constraints in Armenia's planning and budgeting system**



Source: Authors

Section 2.3.1: Strategic planning for infrastructure is constrained by the absence of key sectoral plans, limited costing, and weak integration with the budget

**103. Strategic plans at the national and sectoral level only partially reflect infrastructure priorities.**

Armenia has managed to complete a growing number of strategic planning documents over the recent political cycle, but the hierarchical and substantive linkages between these documents at different levels is weak (See Box 4). These national level documents include several strategic infrastructure priorities. At the same time, sectoral strategies for key infrastructure sectors such as transport and water and irrigation are still not fully developed.

**104. The delivery of infrastructure priorities is hindered by institutional fragmentation and lack of adequate performance indicators.** The tracking and monitoring of implementation progress in strategic infrastructure priorities is hindered by institutional fragmentation as no specialized ministry, unit or organization is responsible for the delivery of strategic plans (see Box 4). Further, infrastructure priorities in national and sectoral plans are not linked to specific performance indicators, which hinders the effective tracking of implementation progress (see Annex 2.2).

**Box 4. Strategic Planning Framework in Armenia**

**Armenia has managed to complete a growing number of strategic planning documents over the recent political cycle.** The government has set ambitious core national priority objectives, including for infrastructure building, reflected in the Armenia Transformation Strategy 2050 and the Government Program 2021-2026. This higher-level vision should ideally cascade into Government Action Plan Measures and Annual Budget Programs and Measures. To ensure this, the government has already approved almost two dozen sectoral and thematic strategies<sup>2</sup> and has developed cross-cutting documents in thematic areas such as climate change.<sup>3</sup>

**The substantive linkages between these strategies is weak, partly reflecting a lack of a unified legal basis for strategic planning.** Various aspects of strategic planning in Armenia are currently regulated by different legal acts, which do not require coordination and consistency of national and sectoral plans. The legal bases are mainly provided by the Constitution of the Republic of Armenia, the Government Rules of Procedure, the Budget System Law, which determines the budget process and defines fiscal policy objectives, the Annual Budget Law (ABL), which determines budget appropriations, and methodological guidelines for the development of sector strategies.

**There is no specialized ministry, unit, or organization within the government that is responsible for the delivery of strategic priorities, including in infrastructure.** The Prime Minister's Office (PMO), the Ministry of Finance (MoF) and the Ministry of Economy (MOE) currently play important coordinating roles in strategic planning, but none has direct responsibility for the delivery of strategic priorities. Within the PMO, high-level coordination is vested in the offices of the Deputy Prime Ministers (DPM). These offices coordinate activities of the sector ministries aimed at the implementation of legal acts, organize program implementation structures, implement strategies and strategic programs, and coordinate cooperation with international financial institutions and international regional organizations. Also, within the PMO, sectoral coordinating units<sup>4</sup> are responsible for the review and public discussion of incoming draft sector strategies, their submission for government approval, and subsequent operational planning and monitoring. The Programs Expertise Department coordinates strategic planning, including methodological guidance, progress monitoring, and overall supervision of Comprehensive Strategic Documents, which are long-term intersectoral strategies.<sup>5</sup>

Footnotes:

[1] <https://www.gov.am/files/docs/4629.pdf>. Adopted in August 2021

[2] These are approved by the Prime Minister's Office Department for Programmes Expertise.

[3] These include its National Defined Contributions (Decision N610 of April 22, 2022) and the issuance of a National Adaptation Plan (NAP).

[4] Including the External Relations Department, State and Legal Affairs Department, Social Affairs Department, Territorial Development and Environmental Department, and Financial-Economic Department.

[5] Annex No 1 to the Decision of the Prime Minister of the Republic of Armenia No. 564-L of May 25, 2018. Charter of the Office of the Prime Minister.

**105. In principle, the MTEF establishes a link between national and sector strategic plans and the budget process.**<sup>93</sup> Armenia's budget process has two stages. The first is the preparation of the MTEF; the second is the detailed annual budget preparation process.<sup>94</sup> The MTEF represents the government's three-year expenditure strategy, linking sectoral policies with budget frameworks, and is the foundation of the annual budget law. It contains the macro-fiscal framework, the aggregate resource envelope, and key fiscal policy priorities for the next three years. Ideally, investment plans at the sector level should be costed and linked to a realistically formulated MTEF.<sup>95</sup>

**106. In practice, strategic and sector investment plans are weakly integrated with the MTEF and by extension the annual budget.** Planning is weakly integrated with core budgeting functions.<sup>96</sup> Weak integration is reflected in persistent discrepancies between actual capital expenditure and the three-year MTEF forecasts (Figure 32). The difficulty in identifying priorities in sector strategies is transmitted to the budgetary system, causing prioritization problems in the MTEF and the annual budget. Even if priorities are identified, sector strategies often omit the resource requirements or contain highly approximate cost estimates. In the absence of careful expenditure estimates in sector strategies, the main burden of strategic decision making is shifted to the MTEF stage, thus weakening the link between strategic planning and budgeting systems.

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<sup>93</sup> At central government level, medium-term fiscal planning is under the responsibility of the MoF. The MoF is also responsible for the preparation and execution of the annual budget. It presents the medium-term fiscal framework in the MTEF before the preparation of the budget, prepares the draft budget, and monitors and provides consolidated reports on budget execution. It also coordinates intergovernmental fiscal relations and regional development. The MoF along with the Ministry of Economy plays a critical role in the PIM, including the economic appraisal of investment projects. The MoF also plays an important role in the implementation of several cross-cutting strategies such as the Green Strategy.

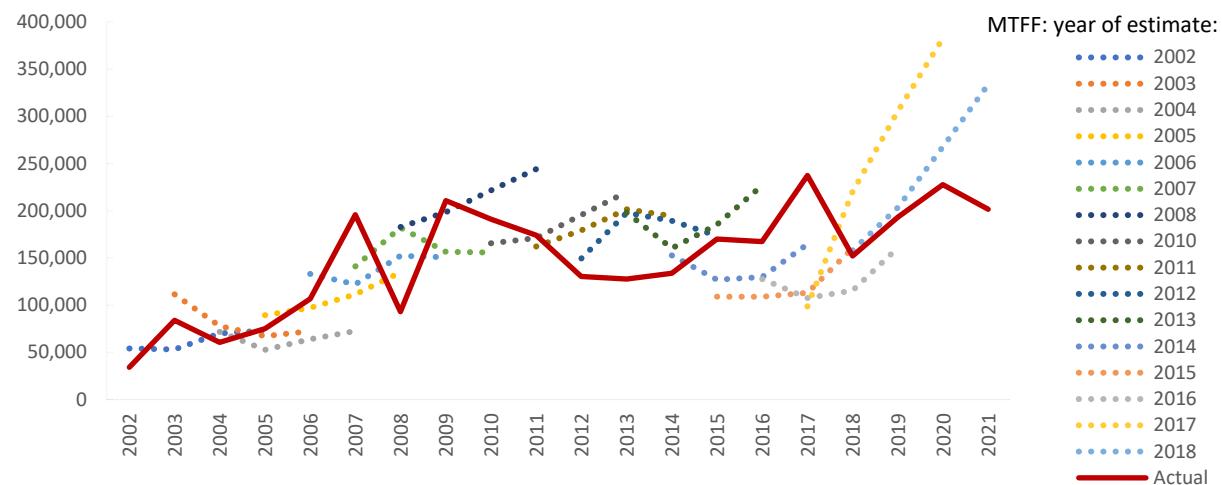
<sup>94</sup> The draft annual budget is prepared along with the MTEF. The 3-year rolling MTEF and the draft annual budget are submitted in July. The budget is typically subject to finalization by October (90 days before the end of the budget year), to be submitted to Parliament for approval.

<sup>95</sup> The following report has a comprehensive discussion of the challenges of preparing sound MTEFs: World Bank. 2013. "Beyond the Annual Budget: Global Experience with Medium-Term Expenditure Frameworks." Washington, DC: World Bank

<sup>96</sup> This is not uncommon in national development planning in other countries. Source: Chimhowu, A., D. Hulme, and L. Munro. 2019. "The New National Development Planning and Global Development Goals: Processes and Partnerships." World Development 120 (August): 76–89. <https://doi.org/10.1016/j.worlddev.2019.03.013>

**Figure 32. Actual capital expenditures versus MTEF forecasts**

Capital expenditures, million AMD



Source: MoF and authors' calculations

Section 2.3.2: The design of capital programs may be impacting project performance, which cannot easily be tracked under existing reporting and monitoring systems

**107. Armenia has implemented program-based budgeting (PBB) since 2019.** The intent of PBB is to shift the focus of budgetary processes from the control of inputs to the production of measurable results. In 2022, the State Budget Annex listed a total of more than 170 programs, including several corresponding to capital expenditures.<sup>97</sup> A full assessment of PBB implementation is currently not feasible given the early stage of implementation and is thus beyond the scope of this report. Nevertheless, Box 5 provides some lessons from the global implementation of PBB that could be useful to Armenia.

**108. Although the budget has put in place a wide-ranging set of measures and actions, assessing the performance of public investments is challenging.** A closer analysis of capital expenditure-related programs indicates that the structure of subprograms is set out for tracking subprograms that correspond to projects with development partners. In the case of roads, domestic capital expenditure activities under subprograms are presented relative to specific road sections but do not give a sense of the degree of strategic network prioritization motivating these inputs. Moreover, the budget presentation does not provide a multi-year perspective concerning budgeting and execution of capital projects. Overall, data are typically provided as self-standing spreadsheet annexes as part of each budget year's submission, which makes ongoing analysis of performance difficult.

<sup>97</sup> The budget is classified with the four-digit codes “ծրագիր” that extend to programs. Under each program code, there are many measures or actions “միջնառողջ” (with five-digit codes). These measures and related actions are based on the nature of the expenditure: current expenditure, capital expenditure, loans, grants, externally financed, or domestically financed.

#### Box 5. Pragmatic Performance-Based Budgeting: Lessons from Global Implementation

**Program-based budgeting is a reform designed to shift the focus of budgetary processes from controlling inputs to producing measurable results.** Consequently, it seeks to bring together nonfinancial results indicators with budgeting and execution measures. In many settings, however, the reforms have proven challenging to implement because they combine objectives of planning, management and control.

**One tension for PBB has been the concern that a focus on higher-level goals undermines financial controls.** In some settings, the result is that PBB has been used to focus more on traditional input controls, leading to a fragmentation of the budget. When it is poorly understood, agencies tend to revert to more traditional usages of “the procurement” or “data management” program. An excessive number of subprogram definitions also means that it can take the budget controller several months into the new financial year to complete the process of allocating at this level (sometimes referred to as “loading the budget”).

**A pragmatic approach to PBB (see Brumby et. al. 2022:4), particularly in lower-capacity settings, would focus on** (i) a clear specification of activities that need to be executed to achieve the program objectives, and (ii) aligned expectations of the inputs required. For example, in health care, it could involve setting up clinics for specific purposes, training required staff, and mounting a vaccination drive. Inputs should be structured in consistent and homogeneous categories that would include the salaries and allowances of staff, the capital and maintenance costs of specific types of equipment, and the purchase of goods such as drugs and other medical paraphernalia.

**Depending on objectives and sector, programs framed in this way would be associated with varying degrees of capital expenditure intensity.** Given that public infrastructure investments will have a number of special features – including planning, budgeting, and implementation across several years for larger projects; physical implementation management; and ensuring that operations and maintenance (O&M) are accounted for to meet program objectives over time – this will mean that policies and practices for PIM project management and PBB need to be reviewed in concert.

**Clear and simple digital business processes and reporting provide for a critical foundation for realizing stronger PIM and PBB in practice.** If PBB design is overly complex, and supporting IT systems are fragmented, this will be the worst of all worlds. A proliferation of nonfinancial indicators and line item fragmentation will undermine the decision support and compliance value of the exercises, particularly as it relates to CAPEX-intensive programs. Toward this end, a periodic set of deep-dive spending reviews of selected programs can help authorities move toward more pragmatic and performance based budgeting.

#### References

Jim Brumby, Ali Hashim, and Moritz Piatti. 2022. Introducing pragmatic program budgeting to address budgeting missteps. Governance for Development (World Bank blog), February 7, 2022.

<https://blogs.worldbank.org/governance/introducing-pragmatic-program-budgeting-address-budgeting-missteps>.

James A. Brumby, Ali Hashim, and Moritz Otto Maria Alfons Piattifuenkirchen. 2022. Introducing the New PPB: Pragmatic Program Budgeting: Overcoming Design Obstacles to Planning, Management, and Control. Washington, DC: World Bank Group. <http://documents.worldbank.org/curated/en/601921643045774672/Introducing-the-New-PPB-Pragmatic-Program-Budgeting-Overcoming-Design-Obstacles-to-Planning-Management-and-Control>.

## Section 2.4: Capital Budget Implementation

**109.** The previous section focused on the upstream PIM processes of planning and budgeting, highlighting weaknesses that hold back the ability of the system to deliver on strategic investment priorities. This section assesses project implementation.

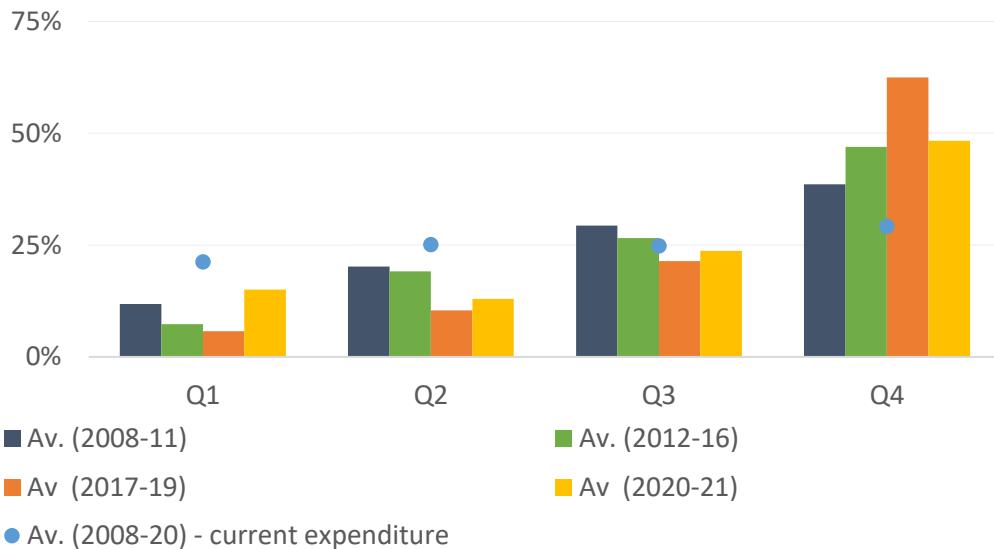
**110. The analysis of project implementation is hindered by data gaps affecting the domestically financed capital project portfolio.** It is difficult to estimate the extent to which overruns and

stalled projects are prevalent in domestically financed projects due to the lack of identifying codes for projects, asset registers, and centralized data management on project monitoring. Financial indicators for the budget execution report (actual versus planned) are automatically generated through MoF and Treasury software. However, such information is not readily available on physical implementation. As a result, major capital projects are not subject to systematic ongoing monitoring during project implementation. This is a critical gap because a real-time understanding of portfolio performance would significantly aid implementation.

Section 2.4.1: Capital budget execution has been volatile, and large projects have faced implementation delays

**111. The execution of capital investments is more volatile relative to recurrent spending.** Current spending has been mostly executed as per original plans (with an average of a 100.9 percent performance ratio over the last decade). In contrast, capital spending has seen significant under-execution, except during 2015-2017 when higher defense spending pushed actual capital spending above its budgeted levels. Excluding 2015-2017, the decade-average execution ratio for capital spending stands at 86 percent (See Figure 10 in Chapter 1).

**Figure 33. Capital expenditure (State Budget)**  
Percent of annual expenditure by quarter, averages 2008-2021

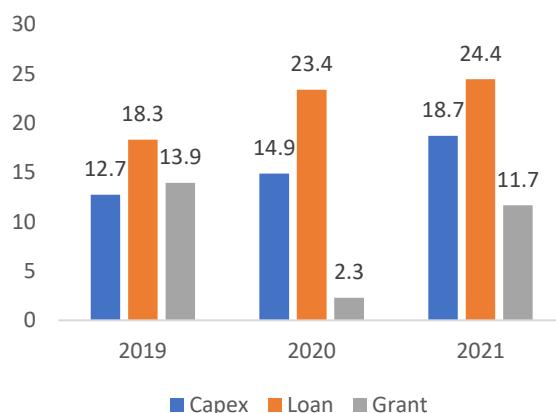


Source: MoF and authors' calculations

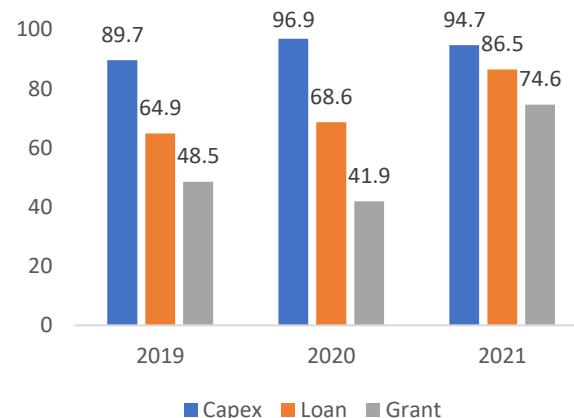
**112. Difficulty in implementing capital spending is evident in the pattern of capital spending through the year.** Between 2008 and 2021, spending in the last quarter typically accounted for 48 percent of overall capital spending for the year (Figure 33). This suggests persistent issues in getting projects off the ground in the earlier stages of the budget year. This appears to have been even more pronounced between 2017 and 2019, with capital spending in Q4 accounting for about 62 percent of overall capital spending on average and only about 16 percent of spending taking place in Q1 and Q2. However, there were some improvements in execution in Q1 of 2020 and 2021, possibly owing to the new measures to start project preparations earlier at the end of the preceding year.

**113. Implementation challenges vary across funding sources, most probably directly linked to their size.** A major program under the Ministry of Territorial Administration and Infrastructure helps illustrate this. The Road Network Improvement Program, classified under Budget Code 1049, is the largest capital program financed by the Government. In 2021, this program accounted for nearly 13 percent of total capital spending and nearly a quarter of total loan-financed capital spending (Figure 34). The project has consistently been the best performer among domestically-financed capital programs, consistently disbursing over nearly 90 percent of annual plans. This stands in contrast to lower disbursement rates for loan- and grant-financed portions of the same program (Figure 35).<sup>98</sup> Further analysis is required to determine the reason for the variation. The difference could be potentially explained by different processes (e.g., procurement) between sources of finances, or alternatively reflect the fact that externally-financed projects (or portions of the projects) could be larger and more complex to execute.

**Figure 34. Road Network Improvements program (budget code 1049) as a share of spending**  
Percentage share



**Figure 35. Road Network Improvement program (budget code 1049) disbursement**  
Disbursement rate relative to the revised plan



Source: MoF and authors' calculations

**114. However, comparing the performance of domestic- and foreign-financed capital expenditure is challenging given the different types of projects that are funded.** Foreign-financed projects appear to be larger, more complex, and multi-year. On the other hand, domestically-financed capital expenditures focus on smaller projects and ongoing rehabilitations. Rather than being designed on a multi-year project basis, domestically financed projects are more akin to annual subprogram allocations. For example, an analysis of the Budget Code 1049 program shows that close to 200 subprograms are budgeted and executed on an annual basis.<sup>99</sup> These subprograms largely focus on addressing immediate demands such as repair and rehabilitation or reconstruction.

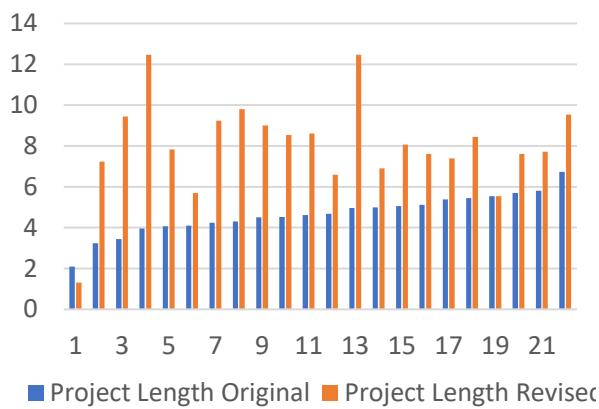
**115. In the absence of data on the domestically financed projects, the chapter focuses on the 22 foreign-financed projects** (see Annex 2.3 for the full list of foreign-financed projects). Delays in

<sup>98</sup> Capital expenditures in Armenia are classified in the budget as both domestic and foreign financed projects, so this chapter analysis follows the same available breakdown.

<sup>99</sup> Programs such as MoTAI's Road Improvement Program (1049) are organized at the four-digit level.

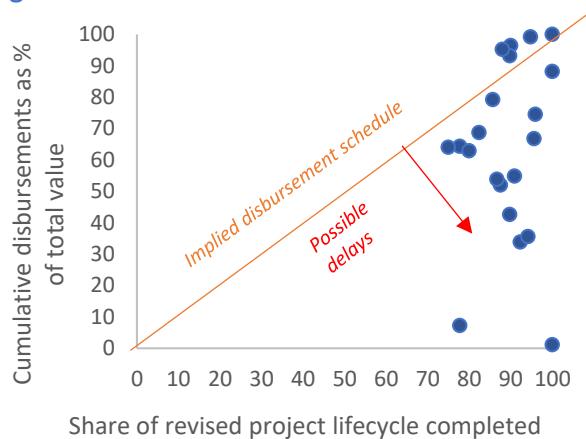
the completion of foreign-financed projects are indicative of implementation difficulties (Figure 36). Completion dates for 20 of the sampled 22 large projects have been revised upward, in some cases nearly tripling the initial time estimate. Based on the loan amount, these projects are estimated to be worth close to 10 percent of Armenia's GDP in 2021. Delays are also illustrated by examining the pace of disbursement relative to an implied disbursement schedule, which assumes uniform distribution across the project lifecycle (Figure 37).<sup>100</sup>

**Figure 36. Large foreign-financed project length**  
Number of years



Source: MoF and authors' calculations

**Figure 37. Disbursement shares relative to project length**

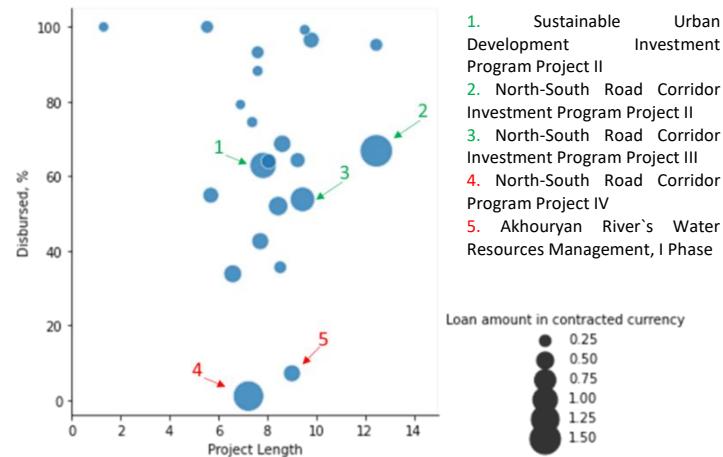


Source: MoF and authors' calculations

**116. Annual delays do not appear to be linked to the sector or length of the project, but the analysis is limited by the small sample size.** There are no major differences in disbursements (a proxy for delays) across sectors. Similarly, there appears to be no significant link between length and average annual disbursements to date (Figures 38 and 39). There appears to be a weak positive relationship between average annual disbursements and project value, but this is weakened by two outlier projects.

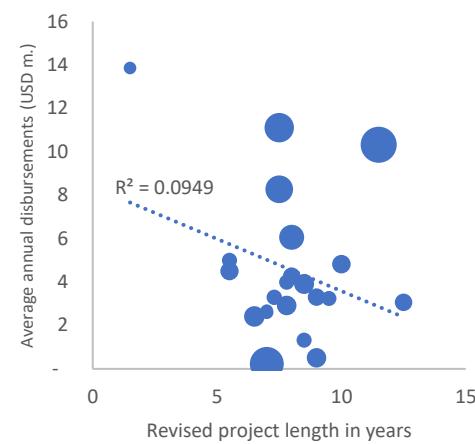
<sup>100</sup> The assumption may not reflect the actual disbursement schedule but may provide an indication of the overall pattern.

**Figure 38. Project length versus cumulative disbursement**  
Project length in years and cumulative percentage disbursement



Source: MoF and authors' calculation

**Figure 39. Project length and average annual disbursement**  
Project length in years and average annual disbursements in USD



Source: MoF and authors' calculation

**117. The undisbursed amounts are concentrated in the 9 largest foreign-financed projects and the roads sector.** Out of total undisbursed funds across the 22 foreign-financed projects, 84 percent are spread over the 9 largest projects, accounting for about 6.5 percent of GDP in 2021. At a sector level, nearly half of undisbursed amounts are concentrated in the roads sector. This is not surprising, given that the sector accounts for 43 percent of the sample of foreign-financed projects (Table 4).

**118. At project level, 2 projects stand out for low levels of disbursement:** (i) the North-South Road Corridor Project IV, with about 1 percent disbursement and about 7 years into implementation, and (ii) the Akhouryan River's Water Resources Management Project (7 percent disbursement and 7 years into implementation). This suggests that most observed delays in delivery of foreign-financed infrastructure could be addressed by focusing on a narrow set of projects that account for the majority of undisbursed amounts.

**Table 4: Implementation period and estimated delays in the largest foreign-financed projects**

Sector	Name	Loan amount, in USD	Effective Date	Original estimated end date	Revised or actual end date	Percent disbursed	Estimated or actual delays, in years
Water	Akhouryan River's Water Resources Management, Phase I	49,500,000	Jun-15	Dec-19	Jun-24	7.2	5
Trade	Trade Promotion & Quality Infrastructure	50,000,000	Jan-15	Oct-20	Sep-22	42.6	2
Energy	Electricity Transmission Network Improvement	52,000,000	Sep-15	Apr-20	Apr-24	68.7	4
Tourism	Local Economy & Infrastructure Development	55,000,000	Dec-16	Aug-21	Jul-23	33.9	2
Education	Seismic Safety Improvement	81,607,906	Dec-15	May-21	May-24	52.0	3
Road	North-South Road Corridor Investment Program Project III	100,000,000	0	Jul-14	Dec-17	Dec-23	53.8
Urban Devt	Sustainable Urban Development Investment Program Project II	112,970,000	0	Mar-16	Mar-20	Dec-23	62.9
Road	North-South Road Corridor Program Project IV	150,000,000	0	Oct-15	Dec-18	Dec-22	1.1
Road	North-South Road Corridor Investment Program Project II	170,000,000	0	Jul-11	Jun-15	Dec-23	66.8

Source: MoF and authors

Note: See Annex 2.2 for a more detailed list.

**Table 5: Undisbursed amounts across sectors, as of February 2022**

Sector	Loan Amount, in USD	Percent of total	Percent of 2021 GDP	Undisbursed, in USD	Percent undisbursed
Roads	529,386,630	43	4.2	272,227,080	49.7
Energy	152,989,821	12	1.2	38,463,604	7.0
Water	119,200,000	10	0.9	79,462,800	14.5
Other	442,968,943	36	0.0	157,436,900	28.8

Source: MoF and authors' calculation

Note: "Total" refers to the 22 foreign-financed projects. "Other" includes projects in the public sector, urban development, agriculture, health, trade, tourism, and social sectors.

Section 2.4.2: Indicative drivers of weak capital project execution include weak project preparation, contracting, and engineering capacity

**119. Inefficiencies in project implementation start with upstream weaknesses in the PIM cycle, such as in project preparation.** For road projects, for example, Armenian agencies highlighted issues with the formal procedures of land acquisition, which stem from a lack of resettlement planning impacting project implementation. This points to issues in the quality and flexibility of project designs, a lack of community consultations, and in general a lack of systematic attention during the identification and appraisal stages of the project lifecycle to possible issues further down the line that could hamper implementation. Issues relating to frequent changes in management during project implementation were also highlighted as a likely implementation constraint.<sup>101</sup>

**120. Implementation is further hampered by downstream PIM processes.** Weaknesses across the upstream functions that relate to poor project selection, appraisal, and resettlement planning are likely contributors to implementation challenges. Initial discussions with line ministries suggest that these are compounded by weaknesses in downstream functions that relate to contracting and engineering capacity. Addressing implementation challenges may require a more nuanced understanding of downstream implementation bottlenecks. While these may also vary across projects, the government could look to prioritize how it addresses challenges by looking to the most consequential or stalled projects to identify these bottlenecks or seek assistance to identify them.

## Section 2.5: Conclusion and Policy Recommendations

**121. The chapter highlighted the following challenges related to capital expenditures in Armenia:** (i) stagnant capital spending and low maintenance spending, which are contributing to a declining public capital stock; (ii) strategic investment planning that is constrained by the absence of key sector plans, insufficient costing, and weak integration of plans with the budget; and (iii) critical data gaps and an inefficient monitoring framework that prevent an analysis of the performance

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<sup>101</sup> Interviews revealed potential difficulties in managing these projects because of frequent changes in the heads of Project Implementation Units (PIU), and recent moves of PIUs within the ministries—in short, challenges in the governing bodies of the foreign-financed projects.

of domestically financed capital projects while large foreign-financed capital projects are facing implementation delays.

**122. An overarching constraint is the lack of availability of data, which limits the analysis of expenditure efficiency and project implementation.** Critical data gaps include data on maintenance spending, historical data on allocations of capital projects within sectors, and the lack of identifying codes, asset registers, and centralized data on implementation progress for domestically financed projects.

**123. Armenia has enacted reforms to begin addressing these challenges.** A key reform is the passage of the 2021 Public Investment Management (PIM) decree, which puts in place a more robust screening and appraisal of all projects, including state budget and public-private partnership (PPP) projects, that exceed AMD 250 million (USD 800,000). The decree thus lays the groundwork for the selection of projects that are more closely aligned to strategic priorities and support growth. Additionally, as noted in Section 2.3, Armenia introduced PBB in 2019, which marks an important step toward aligning spending, including capital spending, with the achievement of results.

**124. This chapter ends with policy recommendations for improving the efficiency of capital expenditures by building on the reforms already enacted.** The recommendations focus on addressing the challenges that have been identified and include: (i) improving data on capital spending to enable evidence-based decision making; (ii) strengthening strategic planning and budgeting of capital expenditures; and (iii) improving project monitoring and addressing key project implementation constraints. The recommendations are summarized in Table 6.

**Table 6: Policy recommendations to increase capital spending efficiency**

Issue	Policy Recommendation
<b>Improve data on capital spending to enable evidence-based decision making</b>	
Lack of project level information on maintenance needs	<ul style="list-style-type: none"> <li>- Collect additional data, through ongoing budget reporting process, on maintenance spending by project; and</li> <li>- Update the asset registry across sectors.</li> </ul>
Insufficient sector-specific data on infrastructure gaps, capital project execution and project performance (for domestic projects)	<ul style="list-style-type: none"> <li>- Improve reporting of public capital expenditure execution data, particularly by (i) presenting data on projects in a multi-year perspective and linking project spending data with data on project outcomes; and (ii) reporting capital spending on particular projects together with recurrent maintenance (O&amp;M) costs associated.</li> <li>- Complement public expenditure execution data with cloud-based capabilities to help identify infrastructure gaps.</li> </ul>
<b>Strengthening strategic planning and budgeting</b>	
Lack of a prioritized and costed investment pipeline	<ul style="list-style-type: none"> <li>- Follow the prioritization process highlighted in the new PIM decree to build a pipeline of appraised and costed projects, to begin implementation in 2024.</li> </ul>
Absence of proper cost estimates in the sector strategies shift the strategic decision-making to the MTEF stage.	<ul style="list-style-type: none"> <li>- Cost sector strategies, with all costing to be reviewed by the MoF to ensure realism</li> </ul>
Weaknesses in the overall strategic planning framework hinder effective planning of public investments	<ul style="list-style-type: none"> <li>- In the short term, improve the performance orientation of the action plan for the 2021–26 Government Program.</li> <li>- In the longer term, implement the recommendations of an ongoing functional review of the strategic planning function.</li> </ul>
<b>Improving project monitoring and addressing key implementation constraints</b>	
Absence of a portfolio-monitoring system, which hinders the government's ability to address ongoing project implementation issues.	<ul style="list-style-type: none"> <li>- In the short term, introduce a digital register of capital projects with unique identifying codes.</li> <li>- In the longer term, seek to develop a system of systematic portfolio monitoring, with institutional mechanisms and formalized data and information sharing between MoF and line ministries to identify and proactively respond to project underperformance.</li> </ul>
Implementation of certain large investment projects are stalled, which are material in terms of GDP and as a share of the budget	<ul style="list-style-type: none"> <li>- Focus on the implementation of the largest stalled projects, through detailed analysis, including surveys to identify specific implementation bottlenecks.</li> </ul>

**Recommendation 1: Improve data on capital expenditures to support evidence-based decision making**

**125. Maintenance spending needs are likely to increase in the medium-term, but prioritizing this spending requires additional data at the project level and updated asset registries.** As the chapter notes, Armenia's maintenance needs are likely to grow as the new pipeline of work is completed. However, increased budgetary allocations for maintenance should follow an assessment of the extent of existing maintenance gaps and needs. An assessment of available maintenance spending data in the transport and health sectors highlights that current data and information on assets is inadequate for strategically prioritizing maintenance spending. Therefore, the recommendation is to: (i) collect additional data through the ongoing budget reporting process on current maintenance spending by project; and (ii) update the asset registry across sectors. Updating the asset registry is not excessively complex or costly from a technical perspective but requires coordination across the MoF and line ministries.

**126. Identifying and addressing sector-specific infrastructure gaps is a priority, which can be facilitated by improvements in public capital expenditure execution reporting and complemented by innovative use of cloud-based facilities.** As noted in the chapter, Armenia faces infrastructure gaps. Furthermore, current levels of capital expenditures in health may be impeding service delivery. However, increasing capital expenditures in these sectors is unlikely to address these gaps and foster better service delivery unless the allocative efficiency of spending within sectors and across regions is assessed and improved. Assessing allocative efficiency requires improvements in the reporting of public capital expenditure execution data, particularly as: (i) projects could be presented in a multi-year perspective and project data linked to the data on project outcomes; and (ii) budget reporting could align capital spending on projects with recurrent maintenance (O&M) costs associated with the project. Aligning capital spending with O&M costs at the project or facility level would be critical for the maintenance of the frontline delivery infrastructure for health and education services – schools, clinics, and hospitals – that have already been built. The public expenditure execution data could be complemented by the innovative use of cloud-based capabilities (as illustrated in Annex 2.1) to help identify infrastructure gaps.

**Recommendation 2: Strengthen strategic investment planning and budgeting**

**127. In the short term, Armenia could focus on building a pipeline of well-designed, properly costed projects following the processes under the newly enacted PIM decree.** The government could strengthen its planning and project selection functions by building a database of potential investment projects and their estimated costs. This could extend from the current PIM pipeline, which is being maintained in spreadsheet form and covers about 18 projects.<sup>102</sup> Project proposals could be ranked using simple prioritization criteria that reflect the government's strategic objectives in line with the processes outlined under the newly enacted PIM Government Decree of February 9, 2023; N 175-N. High-ranked projects could be included in the annual budget, subject to resource constraints. Those high-ranked projects that could not be included in the annual budget could be considered for inclusion in the MTEF for the following year and prioritized for pre-appraisal.

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<sup>102</sup> See Armenia PIM Investment Committee Projects Pipeline Support,

[https://docs.google.com/spreadsheets/d/1gHqT1vBui34sO1IBBhO\\_rbDdgayY8TkIww19rMZC54/edit#gid=0](https://docs.google.com/spreadsheets/d/1gHqT1vBui34sO1IBBhO_rbDdgayY8TkIww19rMZC54/edit#gid=0)

- 128. To strengthen the link to budgeting, sector strategies will need to be costed, and the costing could be reviewed by the MoF to ensure realism.** As noted in the chapter, even when sector strategic priorities are identified, the sector strategies often omit resource requirements or contain highly approximated cost estimates. In the absence of proper expenditure estimates in the sector strategies, the main burden of strategic decision-making is shifted to the MTEF stage, thereby weakening the link between strategic planning and budgeting systems. Improved costing practices during the planning phase, potentially through a review process involving the MoF, could help strengthen the links between planning and the MTEF and between the MTEF and the annual budget.
- 129. Strategic investment planning would also benefit from overall improvements in the strategic planning function.** This includes, in the short term, improving the performance orientation of the action plan for the 2021-2026 Government Program. **As it stands,** the action plan provides rich details but lacks a bird's eye view for delivery. Currently in PDF format, the document could, for example, be complemented by a real-time online dashboard to enable visualization and effective implementation tracking in terms of both process and results achieved. The PER has converted the action plan to a machine-readable format, which can help as an initial step in this regard (see Annex 2.2). In the longer term, Armenia is undertaking a functional review of the strategic planning function. This review would include recommendations to improve legal frameworks, processes, and institutional models to enable better alignment of capital expenditures with strategic priorities.

#### Recommendation 3: Improve project monitoring and address implementation constraints

- 130. To facilitate project monitoring, Armenia should consider developing a portfolio-monitoring system, starting with a digital registry of ongoing capital projects.** As noted in the chapter, critical data gaps hinder the monitoring of project progress and the identification of implementation challenges, particularly for domestically financed capital projects. As a start, these gaps could be addressed through a digital register of capital projects with unique identifying codes, which could be complemented by simple cloud-based tools to track ongoing projects and monitor key implementation data. In the longer term, Armenia should seek to develop a system of systematic portfolio monitoring, with institutional mechanisms and formalized data and information sharing between the MoF and line ministries to identify and proactively respond to project underperformance.
- 131. In the short term, Armenia should focus on understanding the specific implementation bottlenecks affecting the largest under-performing projects.** While no implementation detail data were available for domestically financed projects, the chapter makes it clear that for foreign-financed projects, 84 percent of undisbursed funds (accounting for about 6.5 percent of GDP in 2021) are spread over the nine largest projects. Two high-value projects in water and transport that have experienced lengthy delays stand out, and Armenia should consider leveraging its analytical and human resource capacity to unlock these high-value projects. This could include more detailed analysis, including surveys, so as to dissect and identify the specific implementation bottlenecks that have hampered progress on these projects.

## Annex 2.1 Case Studies using geospatial platform

### Health facilities network

**The share of capital expenditure in the health sector is low.** Time series data of the health budget were not available to assess within sector allocations; however, data for 2019 and 2021 suggest that a very small share of the health budget goes to capital investments (at around 2 percent). For example, in 2019, planned allocations of AMD 887.5 million (1 percent of the health budget) were solely under the World Bank credit program. The additional AMD 2.6 billion in capital expenditure that was approved in the second half of the year was primarily allocated for procurement (AMD2.1 billion) of medical equipment and only AMD 400 million for the renovation of regional health centers.<sup>103</sup>

**Leveraging the Geospatial Planning and Budgeting Platform (GPBP) can help contextualize the extent of infrastructure gaps, and present avenues for policymakers to optimize the targeting of capital spending in the health sector.** Specifically, this case identifies gaps in access to a health facility. It demonstrates how open-access data can help policymakers identify gaps that could be factored into cost-benefit analysis for investment and maintenance decisions. First, as demonstrated below, it can help geographically target investment in facilities to maximize access for the largest number of people. Second, when evaluated across a menu of policies, policymakers can operate off a larger evidence base when deliberating between a set of potential policy objectives (for example, maximizing access to health facilities versus inputs in a given facility).

**Table 1. Access to health facilities**

Distance (km)	Percentage of population with access
2	47.2
5	71.3
10	88.0

**Fewer than 50 percent of the population have access to a hospital or clinic within a 2 km travel distance.** About 12 percent of the population do not have access even at a travel distance of 10 km (Table 1). Health facility locations are extracted from Open Street Map (OSM), with isodistance around them calculated for 2-, 5-, and 10-kilometer travel distances (Figure 1). This could be contributing to the low utilization of medical services, with only 4 outpatient contacts and 12 acute-care hospital discharges per 100 discharges a year, lower than those of comparator countries, which report an average of 8 outpatient contacts and 15 acute-care hospital discharges per 100 discharges a year.<sup>104</sup>

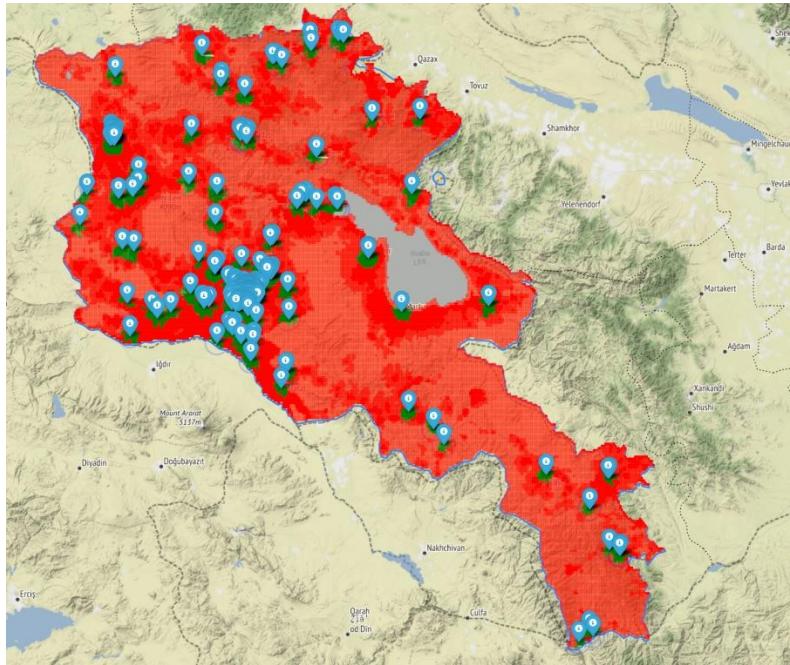
**Such mapping of health facilities can guide decisions to maximize access for the population.** Layering an optimization model on top of the map of defined needs can help quantify the level of investment needed to reach a policy target, for instance, access to health facilities. For example,

<sup>103</sup> Chukwuma, Adanna, Srinivas Gurazada, Manoj Jain, Saro Tsaturyan, and Makich Khcheyan. 2020. “FinHealth Armenia: Reforming Public Financial Management to Improve Health Service Delivery.” Washington, DC: World Bank. <https://openknowledge.worldbank.org/handle/10986/34747>

<sup>104</sup> Comparator countries are different from those used throughout this report. See World Bank FinHealth (2020) and WHO (2017).

applying such a model shows that by adding 10 new facilities, the percentage of the population with access to health facilities increases to 58 percent (2 km), 78 percent (5 km), and 92 percent (10 km) (Figure 2), with the model-prescribed locations that maximize the marginal increase in served population at 2, 5 and 10-kilometer distances (Figure 3).

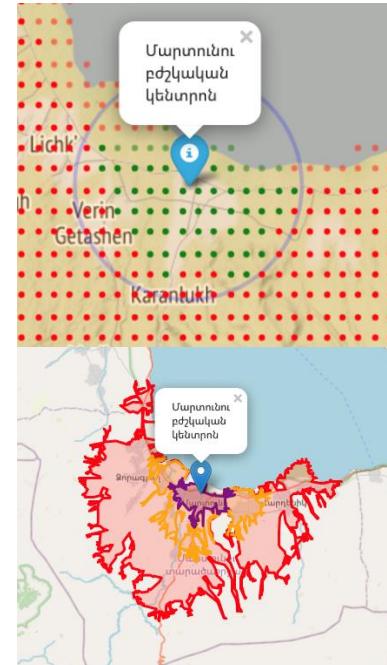
**Figure 1. Map of Health facilities in Armenia**



Notes: Overlaid with a population layer, and showing in red the population without access to a health facility within 5 km of travel distance, and in green the population with access. The relative opacity of different areas of the population map represents population density.

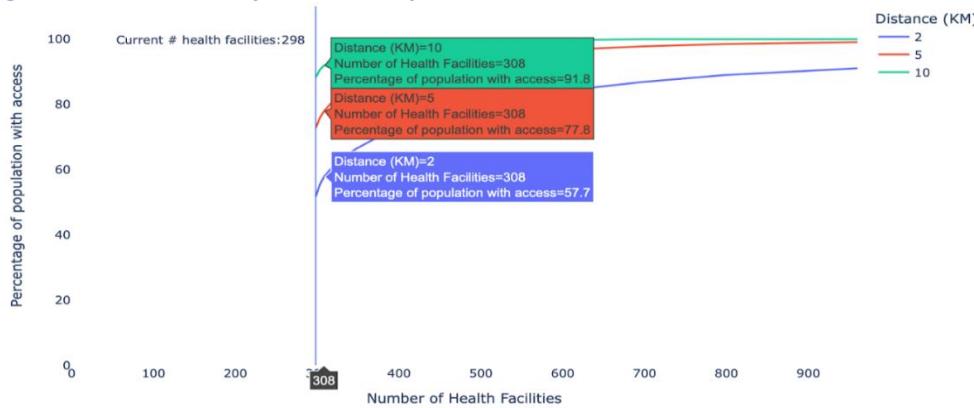
Source: [GPBP PISA - Armenia cJPNE](#)

**Figure 2. Isodistance visualization for one health facility in Armenia**



Isodistances represent specific distance intervals from one single point extending out along every possible route. To calculate the travel distance through the road network, a haversine buffer is first drawn around the health facility location, and then the population within that buffer is selected.

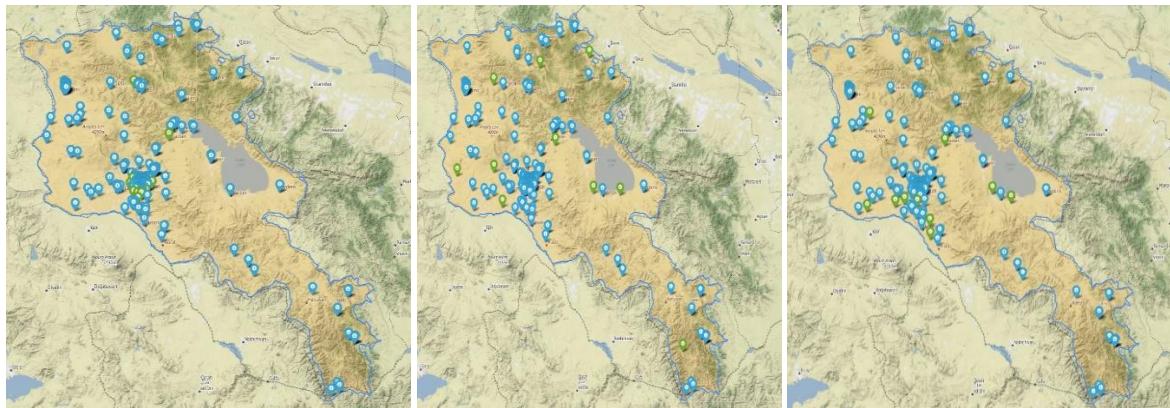
**Figure 3. Health facility network expansion simulations**



Source - [GPBP PISA - Armenia cJPNE](#)

**Figure 4. Prescribed health facilities at 2, 5, and 10 kilometers**

*blue represents existing health facilities; green represents locations prescribed by the model*



Source - [GPBP PISA - Armenia cJPNE](#)

## Roads and bridges infrastructure network

**A whole-of-network public investment perspective incorporates prioritization of, and financing for, different types of roads and bridges transport services infrastructure.** These include (i) higher traffic volume roads and interregional links (ii) high-density urban networks, and (iii) lower density and lower traffic roads, mainly rural last-mile (“lifeline”) roads. Each plays a different role in the network when viewed through a territorial development lens, as well as applied cost-benefit analysis for new investments and maintenance expenditures. Concepts and metrics such as link criticality also need to be contextualized for these different parts of the network. While the central authorities will take a primary role in constructing and maintaining the interregional road links, the other urban and rural road networks need to be viewed through the lens of the ten marzes (regions) and Yerevan city authorities (<https://www.gov.am/en/regions>) and the country’s 926 communities (<http://mes.am/en/the-lsg>). Regions and marzes have limited planning and financing capabilities with respect to the transport network and therefore would ideally benefit from some simple but practical tools to promote effective infrastructure prioritization for roads and bridges.

**Network criticality aims to show which links of the network are particularly vital for the resilient operation of transport services.** This goes beyond a general weighting of road network links by average annual daily traffic (AADT). To illustrate this, the PER includes network criticality analysis, using publicly available datasets to pinpoint the assets where investment can have the greatest impact on network resilience (duplication, increased drainage, and so on). It focuses on questions of whether investments in roads are adding to or expanding the existing network, thereby helping policymakers identify areas for investment that maximize the resilience of the road network. Specifically, the analysis identifies critical road links, defined as “links which, if removed, would impose the largest re-routing (detouring) of traffic around the network.”

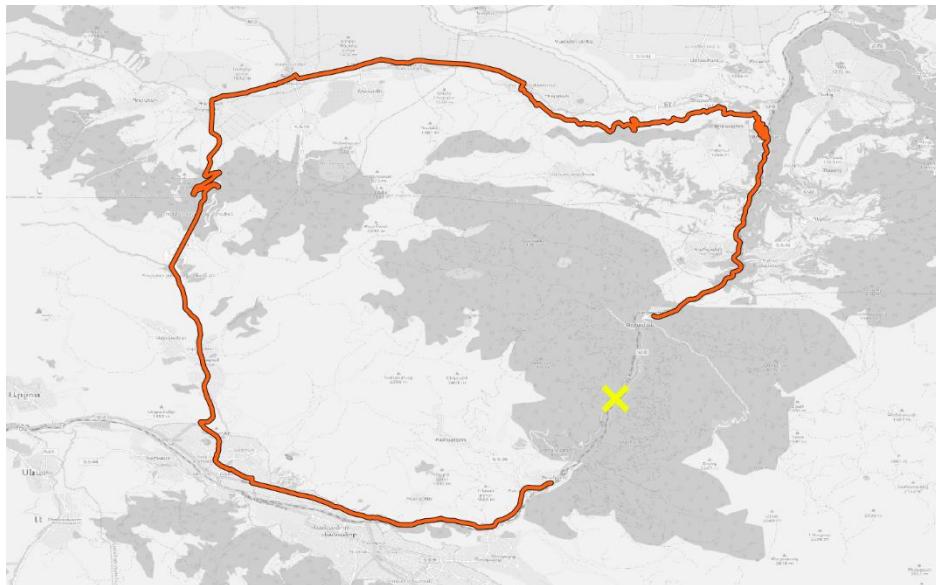
### Network criticality analysis requires two essential data components:

- A road network that can be used to derive the best routing (based on travel time) between any two points in the country, and

- An estimate of the desired travel movements of the country's population.

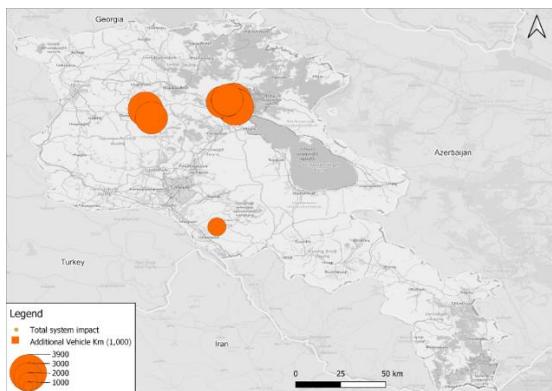
**Using this analysis, the PER identifies road and bridge assets that have a higher than immediately obvious importance to the overall network.** An illustrative example is demonstrated in Figure 5, below, which shows the best alternative route between Vahagnadzor and Pambak should any road failure occur along the M6 route (yellow cross) connecting them through the mountainous area that separates the two towns. Although it will likely be obvious to a local which bridges, mountain passes, or roads present poor alternative routing options, the analysis—by combining road network data with demand data—can show potential investment impact across the entire network. The ability of a road network to move more and more vehicles over increasingly greater travel distances is not a linear function and can decrease suddenly and precipitously as additional vehicle kilometers are traveled—a reality obvious to anyone familiar with rush-hour commuting. Identifying those links that would likely lead to large injections of vehicle kilometers traveled (VKTs), if damaged, would allow maintenance and resilience upgrades to be better prioritized.

**Figure 5. Example of a high-detour link in Armenia**



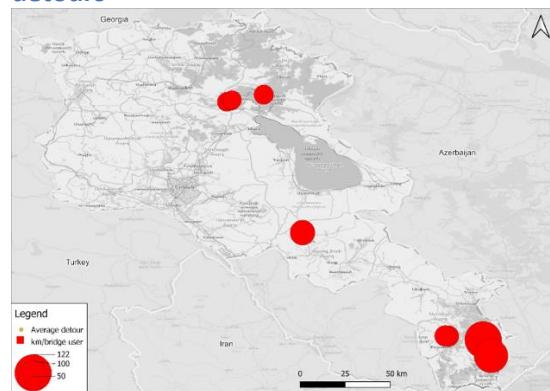
**A listing of the most critical links across the entire network can be produced by ranking all the analyzed assets.** Figure 6 illustrates the spatial distribution of assets. There are two main clusters of critical assets that correspond to two principal routes of access from the capital (Yerevan) to the north through mountainous terrain, which is a prevalent feature of the country's geography. There is a smaller yet significant route identified along one of the two principal southern access routes to the southeast of the country. An alternate lens for viewing these data is to examine the average detour caused by the disruption of a bridge. Figure 7 shows that damage to any of several bridges in the south of the country would result in an average detour of over 120km for users of that bridge, and some of those same bridges in the mountainous region north of Yerevan would cause comprehensive and sustained disruption.

**Figure 6. Bridges with the largest system impact**



Source: Authors, OSM

**Figure 7. Bridges requiring the greatest average detours**



Source: Authors, OSM

## Road case study methodology

### The methodology employed to demonstrate this capability is as follows:

First, an estimate of current desired person movements at a region-to-region level is derived.

- In this analysis, the regions used were clustered areas of approximately equivalent population, each region (referred to as a zone in transport modeling literature) containing up to 10,000 heads of population. This equates to approximately 503 regions in the country and 253,000 ( $503^2$ ) potential origin-destination pairs.
- This estimate of movements should ideally be drawn from observed mobility data. Although there are plans for that, access to these data was not yet fully available.
- Instead, for this baseline analysis, the demand was estimated using well-established transport modeling techniques for demand estimation. This process involves two stages: trip generation (how many trips a population will desire to make) and trip distribution (where those trips will go). Trip generation uses simple linear regression of population attributes, and trip distribution uses a Gravity model controlled by the attractiveness of destinations and known average trip lengths.

**Each travel movement is routed onto the network by choosing the shortest path between origin and destination based on travel time (arguably the best simple perceived cost definition for route choice).** This produces two numbers for each of the 25,000 potential travel movements – how many people want to make that movement, and how many kilometers will need to be driven to make it.

- The travel time is based on the lowest common denominator information from the OSM data set – namely, the time taken to travel at the posted speed limit, or if that is not available, an estimate of the posted speed limit made from the road hierarchy (highways = 100km/h, local roads 40km/h, and so on).
- If these travel times were derived from more accurate sources, we would potentially increase the scope of the analysis to include a measure of “additional minutes of travel” but have chosen not to do so in this analysis.

**Finally, the distance traveled by the entire population is compared for two scenarios:** the road network as it exists now (the base distance), and second, where a particular road or bridge is inoperable as a result of, for instance, flooding or collapse (the alternative distance). This comparison is repeated for 420 road assets categorized as bridges in OSM.

- a. The difference between the alternative distance and the base distance for a given origin-destination can then be weighted by the number of people desiring to make that movement to produce the “additional kilometers of travel required.”
- b. The sum of this metric across all desired origin destinations is the overall impact on the network of removing that road or bridge asset.

## Annex 2.2 Medium-Term Public Infrastructure Priorities

**The Government's five-year program itemizes several priorities related to public infrastructure.** Although the related Action Plan is published online in both Armenian and English, it is made available only as a non-machine-readable PDF document. In the spirit of more a digital-oriented government, we translated the Action Plan into a dashboard data visualization format, with the ability to search various topics of interest. We analyze these with respect to type of infrastructure that shows prioritization of a series of road corridors, primary roads, bridges, and some health projects – broadly in line with development needs and infrastructure gaps.

**The data covers 7 ministries, 250 objectives, and 648 actions (see Table 1), and a further range of associated expected outcome metrics.** Ministry of Territorial Administration and Infrastructure (MoTAI) has by far the largest number of objectives. These in turn are associated with possible roles for other co-implementing bodies and timelines.

**The current format, however, does not provide a real-time sense of whether respective actions are on track, or have been amended, or are adequately resourced.** For example, one action assigned to the MoE is “*establishing a bank of public investment programs (formation of an integrated digital system of public investment programs).*” and an implementation milestone includes “*establishing a bank of public investment programs 3<sup>rd</sup> ten-day period of June 2022.*” However, there is no real-time update on whether this milestone has been met, and if so, what the revised targets are.

**Table 1. Overview of actions**

Row Labels	Count of Actions
Ministry of Economy	71
Ministry of Finance	39
Ministry of Healthcare	103
Ministry of High-Tech Industry	104
Ministry of Justice	65
Ministry of Labour and Social Affairs	57
Ministry of Territorial Administration and Infrastructure	209
(blank)	
<b>Grand Total</b>	<b>648</b>

Source: GP2021 – Analysis

### Annex 2.3 List of foreign-financed projects

ID	Sector	Loan /Credit	Loan currency	Loan amount	Canceled amount	Effective Date	Disbursement Deadline		Disbursed, percent
				In contracted currency	Original		Revised/actual		
20	Agriculture	Community Agriculture Resource Management and Competitiveness II	USD	23,000,000	2,370,000	23-Jan-15	30-Sep-20	31-Aug-22	88.2
18	Education	Seismic Safety Improvement	SDR	63,259,000		22-Dec-15	31-May-21	31-May-24	52.0
7	Energy	Electricity Supply Reliability (Additional Financing)	USD	40,000,000	4,000,000	03-Feb-15	30-Apr-19	30-Apr-24	64.3
11	Energy	Electricity Transmission Network Improvement	USD	52,000,000	12,142,897	21-Sep-15	30-Apr-20	30-Apr-24	68.7
17	Energy	Power Transmission Rehabilitation	SDR	24,022,000		12-Feb-15	30-Jun-20	30-Jun-22	74.5
19	Energy	Power Sector Financial Recovery	USD	30,000,000		19-Jul-16	31-Jan-22	31-Jan-22	100.0
22	Health	Disease Prevention and Control	SDR	22,800,000		22-Jul-13	15-Apr-20	31-Jan-23	99.2
14	Public Sector	Public Sector Modernization III	USD	21,000,000	700,000	06-May-16	30-Apr-21	31-Mar-23	79.2
1	Road	North-South Road Corridor (I Tranche)	EUR	21,000,000		27-Aug-14	30-Sep-16	17-Dec-15	100.0
2	Road	North-South Road Corridor Program Project IV	USD	150,000,000		09-Oct-15	31-Dec-18	31-Dec-22	1.1
3	Road	North-South Road Corridor Investment Program Project III	USD	100,000,000		24-Jul-14	31-Dec-17	31-Dec-23	53.8
4	Road	North-South Road Corridor Investment Program Project II	USD	170,000,000		18-Jul-11	30-Jun-15	31-Dec-23	66.8
6	Road	Armenia Georgia Border Regional Road (M6 Vanadzor-Bagratashen) Improvement	EUR	44,037,000	2,641,219	24-Apr-17	31-May-21	31-Dec-22	54.9

8	Road	Lifeline Improvement	Road and Network	USD	45,000,000		15-Jul-13	31-Oct-17	30-Apr-23	96.5
Social	Social Development	Investment Development	and Local Economy & Infrastructure	USD	30,000,000		22-Sep-15	31-Oct-20	30-Apr-23	93.2
12	Tourism	Development	Trade Promotion & Quality Infrastructure	USD	55,000,000	12,200,000	16	31-Aug-21	31-Jul-23	33.9
21	Trade	Sustainable Urban Development	Infrastructure	USD	50,000,000	2,000,000	14-Jan-15	31-Oct-20	30-Sep-22	42.6
5	Urban development	Sustainable Urban Development	Investment Program Project II	USD	112,970,000	7,000,000	16	30-Mar-20	31-Dec-23	62.9
13	Urban development	Sustainable Urban Development	Akhouryan River's Water Resources Management, I Phase	SDR	30,989,000	3,534,071	19-Jul-11	30-Jun-16	31-Dec-23	95.2
9	Water	Municipal Infrastructure Development II Project Phase III	(Lory Shirak Armavir)	EUR	50,000,000		29-Jun-15	30-Dec-19	30-Jun-24	7.2
10	Water	Irrigation System Modernization	Modernization	EUR	30,000,000		21-Jun-14	30-Dec-18	30-Dec-22	35.6
15	Water			USD	40,000,000		10-Jun-16	30-Jun-21	30-Jun-24	64.0

# **Chapter 3: Improving the Efficiency and Effectiveness of the Social Protection System**

## Chapter 3: The effectiveness and efficiency of social protection<sup>105</sup>

### Section 3.1: Introduction

**132. Armenia has a relatively well-developed social protection (SP) system** underpinned by legislation and resting on three pillars that are common around the world: social insurance (SI), social assistance (SA), and labor market (LM) policies and programs.<sup>106</sup> Armenia's comprehensive array of SP programs includes contributory and noncontributory benefits (cash or in-kind), social assistance services, and labor market measures (LMM) aimed at smoothing income and addressing various risks throughout a person's life (Table 7).

**Table 7: The Social Protection System in Armenia**

Social Insurance (contributory)	Social Assistance (non-contributory)	Labor Market Measures
<b>Pensions</b> <ul style="list-style-type: none"> <li>- Old-age pensions</li> <li>- (Employment Pensions)</li> <li>- Other contributory pensions (including survivor, disability, and other special schemes)</li> </ul> <b>Other social insurance</b> (for those in formal employment) <ul style="list-style-type: none"> <li>- Childcare benefits</li> <li>- Sickness/Injury leave benefits</li> <li>- Maternity benefits</li> </ul>	<u>Cash transfers</u> <ul style="list-style-type: none"> <li>- Family Living Standards Enhancement Benefits (FLSEB)</li> <li>- Childcare benefits</li> <li>- Childbirth lump-sum benefits</li> <li>- Maternity benefits for non-working mothers</li> <li>- Old-age social pensions</li> <li>- Disability benefits</li> <li>- Others</li> </ul> <u>Food, in-kind and near-cash transfers</u> <ul style="list-style-type: none"> <li>- School feeding</li> <li>- Subsidized baby food</li> <li>- Targeted health, education, and housing/utility subsidies</li> </ul> <u>Social assistance/care services</u> for children/youth/disabled/elderly	<ul style="list-style-type: none"> <li>- Vocational training</li> <li>- Internships</li> <li>- Wage subsidies</li> <li>- Unemployment assistance benefits (for job search and relocation)</li> <li>- Childcare assistance to promote LM re-entry before second year</li> <li>- Financial support for LM inclusion of persons with disabilities</li> <li>- Business start-up assistance</li> <li>- Job fairs</li> </ul>

Note: Adapted from the Core Diagnostic of the Social Protection System in Armenia, 2021. Not all benefits and services are included.

**133. The SP system in Armenia has undergone significant reforms in the last decade, especially in pensions.** The major pension reforms enacted between 2014 and 2018 include: (i) shifting the financing of basic and labor pensions from a social insurance fund to the state budget, and (ii)

<sup>105</sup> The World Bank thanks Armenuhi Hovakimyan, UNICEF Armenia Social Policy Specialist, for her contribution to the Social Protection chapter with technical expertise and continuous feedback on social protection spending, efficiency and effectiveness of social assistance programs, vulnerability assessment system reform, and childcare allowances.

<sup>106</sup> This chapter uses a loose definition of "social insurance" and "contributory benefits." These benefits in Armenia are now financed from the state budget through a portion of personal income taxes. In the case of pensions, for the years prior to 2013, participation required the payment of social insurance contributions to the State Social Insurance Fund (SSIF). Since 2013, participation has required the payment of personal income tax.

introducing a mandatory funded pension pillar. Social assistance reforms have been less extensive but are ongoing. Social protection service delivery has also been recently reformed, with social protection and employment benefits and services delivered through territorial Unified Social Services (USS) centers since 2021.<sup>107</sup>

**134. This chapter reviews social protection spending in Armenia and offers recommendations to improve spending efficiency and effectiveness.** The chapter begins with an overview of the financing and coverage of the social protection system (Section 3.2). Each of the three main pillars of the SP system are then reviewed, with a focus on their outcomes, the likely fiscal impact of foreseen reforms and policy adjustments, and opportunities to achieve objectives while improving spending efficiency and effectiveness (Sections 3.3-3.5). Section 3.6 concludes with policy recommendations.

**135. Given the complexity of the social protection system in Armenia, this chapter cannot provide an in-depth and comprehensive review of the system but rather seeks to address a limited number of selected topics.** Sections 3.2 to 3.5 will address the following questions:

- a. ***Financing and coverage of the social protection system:*** What is the level and composition of social protection spending in Armenia, and how does this compare with other countries? What is the impact on poverty and inequality of social protection spending?
- b. ***Old-age pensions:*** What is the likely fiscal impact of improving pensions adequacy in line with the government policy commitments? What are the likely consequences of increasing only the minimum pension without adjusting the labor pension parameters? What measures should be taken for the long-term sustainability of the pension system?
- c. ***Social Assistance:*** What are the welfare outcomes, distributional impacts, and spending efficiency of the main social assistance cash transfer programs? What are the expected implications of the ongoing reforms for the effectiveness and efficiency of social assistance programs? What are the options for improving the affordability of spending on social assistance?
- d. ***Labor Market Measures:*** Is the allocation of funds consistent with the evidence regarding needs and the programs' effectiveness? What are the priority actions to enhance the outcomes of Public Employment Services and other Active Labor Market Measures (ALMM)?

**136. Assessing the overall effectiveness and efficiency of social protection is complex.** Social protection systems include a complex mix of policies and programs with different and not always consistent objectives. For example, social protection cash benefits for families with children often try to address child poverty but also early development, fertility (through childbirth grants), or attachment of mothers to the labor market (by compensating for the cost of childcare). To assess

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<sup>107</sup> The USS replaced the three previously existing state agencies affiliated with the Ministry of Labor and Social Affairs MoLSA): the State Employment Agency, the Social Security Administration, and the Medical-Social Examination Agency. There are 49 USS territorial centers aiming at integrating social protection provision through the unified administration of services affiliated with the MoLSA and the Territorial Offices of Social Services, previously under the supervision of the subnational (Marz) governor's office.

social protection outcomes, this chapter uses a simple set of indicators (Box 6) and a comparative approach by benchmarking against similar programs from peer countries in the region.<sup>108</sup>

Box 6. Assessing efficiency and effectiveness of social protection programs

Key performance indicators include program coverage, beneficiary incidence, benefit level/ adequacy, and impacts on reducing poverty and inequality (Table B5-1).

The chapter considers a program or set of programs *effective* when (i) they achieve the desired outcomes – for example reducing or preventing poverty/ inequality or placing jobseekers into jobs, or (ii) when it ensures a high coverage of the intended target group, and adequate benefits.

A program is considered *efficient* when: (i) it achieves the outcomes at a low unit cost (benchmarked against other programs in the country or against similar programs in other countries). For example, to measure efficiency in achieving poverty outcomes, the chapter uses the benefit-cost ratio; or (ii) most of its funds reach the target group as defined by the program objectives (i.e., there are no “leakages” to households who should not receive benefits); the corresponding indicator is the targeting performance (or targeting efficiency). For example, if the main objective of a child allowance program is to address child (monetary) poverty, a universal program providing benefits to all children is likely to be less efficient than a poverty-targeted one.<sup>1</sup>

**Table B6-1. Definitions of the main indicators used to assess social protection programs**

<b>Adequacy:</b> Share of beneficiaries' welfare (consumption or income) covered by benefits (on average). For pensions the chapter uses an additional measure of adequacy - the benefit ratio, defined as the ratio between the average pension benefit and the economy-wide average wage.
<b>Benefit-cost ratio:</b> The poverty gap reduction, in monetary units, for each unit spent on the social program.
<b>Beneficiary/benefit incidence:</b> How much of the program resources are directed to each group/ segment along the income distribution of the population. Sometimes used interchangeably with “targeting”.
<b>Coverage:</b> Percent of population or a given population group participating in the program
<b>Exclusion errors:</b> Errors that occur when individuals or families from the intended target group do not receive benefits from the program.
<b>Inclusion errors:</b> Errors that occur when individuals or families not belonging to the target group receive benefits from the program
<b>Poorest (or bottom) quintile (Q1):</b> The poorest 20 percent of the population
<b>Targeting performance:</b> The share of funds (benefits) that reach the intended target group; or the percent of program beneficiaries who belong to the intended target group.

**Footnotes:**

[1] However, a universal program can be more efficient than a poverty-targeted one when the administrative costs of targeting are high, or targeting is affected by significant inclusion errors. It is worth noting that efficient programs still could be affected by inefficiencies (for example exposure to fraud, high cost born by beneficiaries, work disincentives, and so on).

<sup>108</sup> To the extent possible, the comparator countries were selected to have similar income levels and demographics.

## Section 3.2: Financing and Coverage of the Social Protection System

**137. Social protection expenditure represents more than one-fourth of Armenia's budget and is the largest category of government spending.** After a few years of decline, social protection expenditure increased from 6.3 percent of GDP in 2019 to 8 percent of GDP in 2021 (Figure 40).<sup>109</sup> A significant share of this increase was driven by the social protection response to the twin crises in 2020, which represented about 0.7 percent and 1.2 percent of GDP in 2020 and 2021, respectively, with most of the spending going toward noncontributory benefits and services.<sup>110</sup> In 2020, as part of the crisis response, the financing of each SP pillar (social insurance, assistance, and labor market measures) increased both relative to GDP and in real terms.<sup>111</sup> In 2021, conflict-related social assistance expenditures continued to increase. In contrast, spending on labor market measures and social insurance benefits decreased in real terms in 2021 compared to 2020 by almost 20 percent and 5 percent, respectively.

**138. Despite social protection being the largest budgetary spending, Armenia spends less on social protection benefits and services as a share of GDP compared to its peers (Figure 41).** In 2021, Armenia spent about 7.2 percent of GDP on SP benefits and services and about 0.8 percent of GDP for the government contribution to the mandatory accumulation pension system (the second pillar).<sup>112</sup> Social assistance spending (1.7 percent and 1.9 percent of GDP in 2019 and 2021, respectively) is similar to most other comparator countries,<sup>113</sup> expenditure on social insurance benefits (largely pensions) is below that of most peers, and financing of labor market measures (at 0.02 percent of GDP in 2021) is below the average of all comparators. The 2019 data, which were not affected by the crisis response and is thus more suitable for comparisons, shows a similar picture.

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<sup>109</sup> This chapter uses adjusted spending figures compared to the consolidated budget by excluding employees' contribution to the mandatory accumulation pension system (Pillar 2) and the administrative and capital costs incurred to provide benefits and services (including the operating cost of the Unified Social Services or the cost of NORK, the agency charged with maintaining the various social protection databases and information systems). After these adjustments, SP spending during 2018-2021 was 9-11 percent lower than the figures reported in the consolidated budget. Most of the difference is due to the exclusion of employees' contribution to Pillar 2, which for the purpose of this chapter is not considered expenditure.

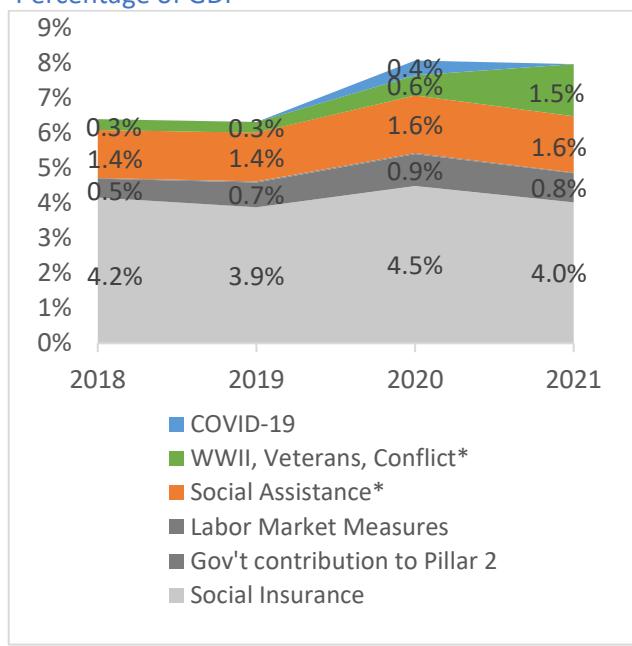
<sup>110</sup> While most of the social protection response to the conflict (including temporary support for displaced people) was provided through new programs and measures, part of it was provided through existing programs for veterans and other similar historical compensations, which account for about 0.3 percent of GDP. The additional spending related to the 2020 conflict is estimated at 1.2 percent of GDP in 2021.

<sup>111</sup> In 2020, overall SP financing increased by 18 percent year-on-year in real terms.

<sup>112</sup> This is an individual savings account (that is, a defined contribution plan). The government match is supposed to decrease in time and eventually be phased out.

<sup>113</sup> The average of comparator countries is 2.3 percent of GDP, and the median is 1.5 percent given that Kosovo and Georgia's exceptionally high rates drive up the mean. For Armenia, we used 2019 as the best year for comparison on social assistance and we included all social assistance expenditure.

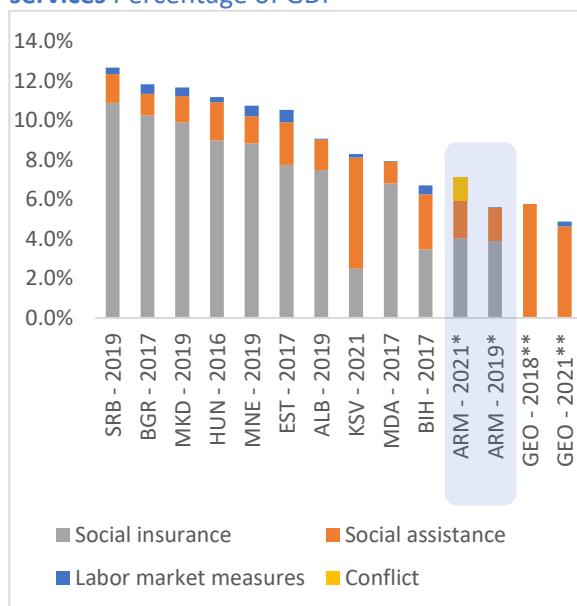
**Figure 40. Spending on social protection**  
Percentage of GDP



Source: Authors' calculation based on functional classification spending data, MoF

\* The WWII, Veterans, and Conflict category includes few permanent measures that usually are classified as Social Assistance, and which are estimated at about 0.3 percent of GDP across years. Hence, total Social Assistance spending during 2018-2021 is estimated at 1.7-1.9 percent of GDP.

**Figure 41. Spending on SP benefits and services Percentage of GDP**

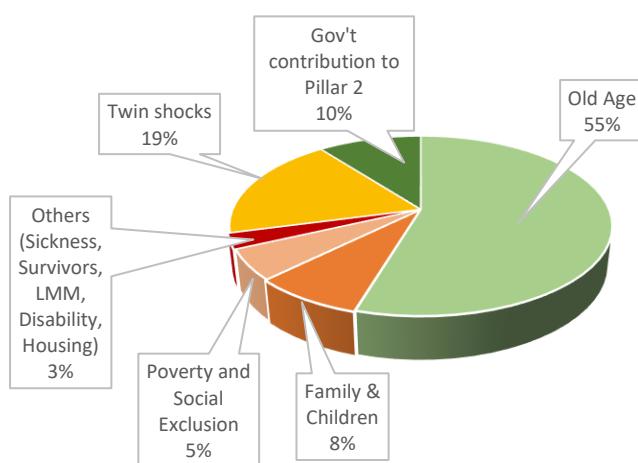


Source: SPEED (Social Protection Expenditure and Evaluation Database). 2022. Database, Washington, DC: World Bank.

\* To ensure comparability of the data, for Armenia we include only the spending on benefits and services, while the government contribution to Pillar 2 is excluded.

\*\* Georgia has a universal non-contributory flat-rate basic pension, classified as social assistance

**Figure 42. Social protection spending composition, 2021. Percent**



Source: Authors' calculation based on the functional classification spending data, MoF

Note: See footnote 97 for details.

**139. Despite the large number of benefits and services, most SP expenditure is concentrated in three functional categories: old age, family and children, and poverty and social exclusion.**

Without taking account of the measures introduced in response to the twin shocks, Armenia's social protection system in 2021 included 51 cash or in-kind benefits (down from 54 in 2019) and 36 services (down from 41 in 2019), with over 95 percent of funds going toward cash benefits.<sup>114</sup> Most SP expenditure in 2021 was concentrated in three functional categories of programs: Old Age; Family and Children; and Poverty and Social Exclusion (Figure 42). Old-age benefits account for the largest share of SP spending, representing more than half of SP expenditure mostly in the form of pensions such as contributory employment pensions, special pensions, and social pensions.<sup>115</sup> Poverty-targeted programs, and schemes for families and children represent 5 percent and 8 percent of the total SP budget, respectively. All other categories of programs (including labor market measures, housing, disability) together made-up 3 percent of SP expenditure. It is worth noting that despite their low level of financing, these other categories together account for over a half of the different types of social protection benefits and services in Armenia.

**140. The six largest cash benefit programs (in terms of expenditure) account for 75 percent of the expenditure on benefits and services, while over 80 smaller social protection programs account for the rest.** The large programs include: two old-age benefits (employment and social pensions); three family and children benefits (maternity benefit, one-time childbirth grant, and childcare allowance for children under the age of 2), and one poverty-targeted benefit (the Family Living Standard Enhancement Benefit, also known as the Family Benefit Program).<sup>116</sup> These six programs account for two-thirds of total social protection spending and 75 percent of the expenditure on benefits and services (Table 8).<sup>117</sup> There are around 80 different small social protection programs, almost half of them in the form of provision of services, which accounts for the remaining 25 percent of the expenditure on benefits and services. These programs are not evaluated in this chapter, with the rest of the analysis focusing on the performance of the large programs. But given that these programs account for a sizable share of total spending, a follow up study is needed to evaluate the efficiency and effectiveness of these smaller programs.

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<sup>114</sup> In 2021, 27 schemes were implemented in response to the 2020 conflict, and 4 in response to COVID-19. Of the 27 conflict-related schemes, 8 were pre-existing (permanent) and are included in the analysis in the "Others" category. The 23 new measures to deal with the twin shocks are not counted.

<sup>115</sup> Employment pensions in Armenia consist of basic and labor pensions, described in Section 3.3.

<sup>116</sup> The Family Benefit Program comprises three schemes: one for families with children, one for single persons or families without children, and the quarterly emergency assistance.

<sup>117</sup> Benefits and services exclude the government contribution to Pension Pillar 2.

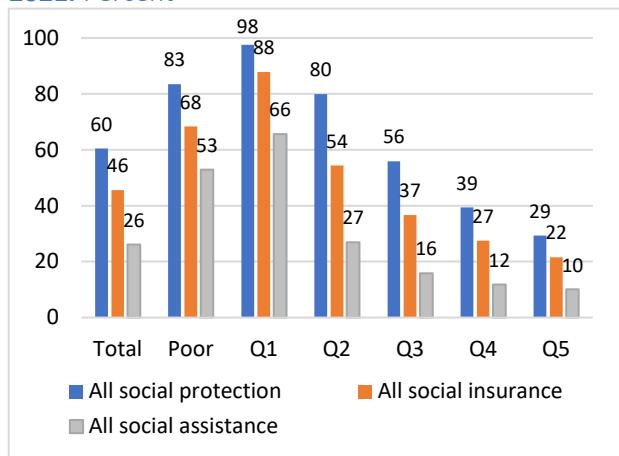
**Table 8: Total number of SP programs, and spending on the six largest programs (2021)**

	Number of programs/schemes			Large Programs (over 0.1 percent of GDP)	Spending as percent of GDP
	Cash/In-Kind	Services	Total		
<b>Old age</b>	5	5	10	Employment and/or special pension	3.94
				Social Allowance (Social Pension)*	0.38
<b>Family/Children</b>	7	8	15	One-time childbirth grant	0.26
				Maternity benefit	0.19
				Childcare allowance for children under 2	0.12
<b>Poverty/Exclusion</b>	4	4	8	Family Benefit Program (FLSEB/FBP)	0.43
<b>Sickness</b>	2	0	2	-	-
<b>Disability</b>	3	7	10	-	-
<b>Labor Market</b>	9	9	18	-	-
<b>Housing</b>	5	2	7	-	-
<b>Other</b>	16	1	17	-	-
<b>TOTAL</b>	<b>51</b>	<b>36</b>	<b>87</b>	<b>Six largest programs, total</b>	<b>5.32</b>

**141. The overall coverage of social protection benefits in Armenia is comparable to average levels in the region.** In 2021, six out of ten Armenians were living in households covered by at least one social protection cash benefit program. Almost half (46 percent) of the population was covered directly or indirectly by social insurance benefits (mostly pensions), while social assistance covered 26 percent of the population (Figure 43).<sup>118</sup> The social protection coverage of the bottom quintile of the population is almost universal (98 percent) and is progressively reduced for the wealthier households (29 percent among the richest quintile). Compared with the average for peer countries, Armenia fares better on social insurance, is around the average on social assistance, and is worse on labor market measures (Figure 44).

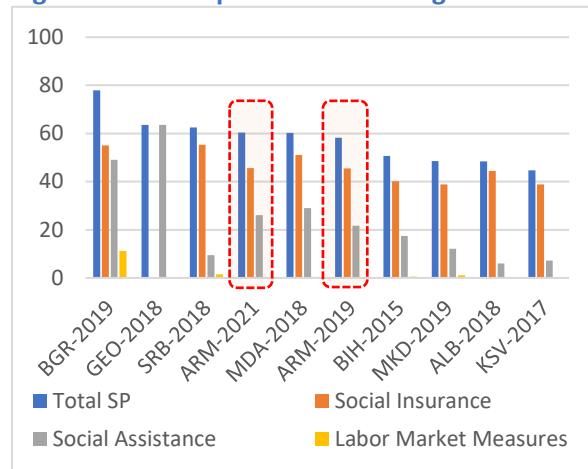
<sup>118</sup> Household members living together and sharing resources with the direct recipient of a benefit (for example, a pension) are considered indirect beneficiaries. Unless otherwise specified, all analyses in this chapter considers both direct and indirect beneficiaries.

**Figure 43. Social protection coverage, Armenia 2021. Percent**



Source: ILCS 2021, authors' calculations Note: The poor are defined as those with consumption levels below the national poverty line in the absence of benefits.

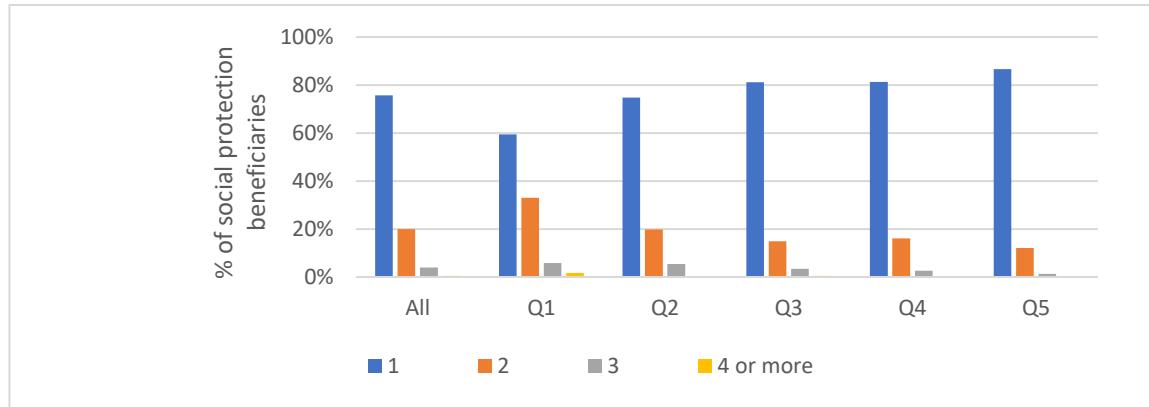
**Figure 44. Social protection coverage. Percent**



Source: SPEED (Social Protection Expenditure and Evaluation Database). 2022. Database, Washington, DC: World Bank. Note: The welfare indicator for all countries except Bulgaria is based on consumption. In Bulgaria, the welfare aggregate is based on disposable incomes.

**Figure 45. Overlap of the six largest benefits, 2021**

Number of benefits received by social protection beneficiaries by quintile (Q1 = lowest income quintile)



Source: Authors' calculation, ILCS 2021. Note: Quintiles are based on post-transfer welfare (consumption).

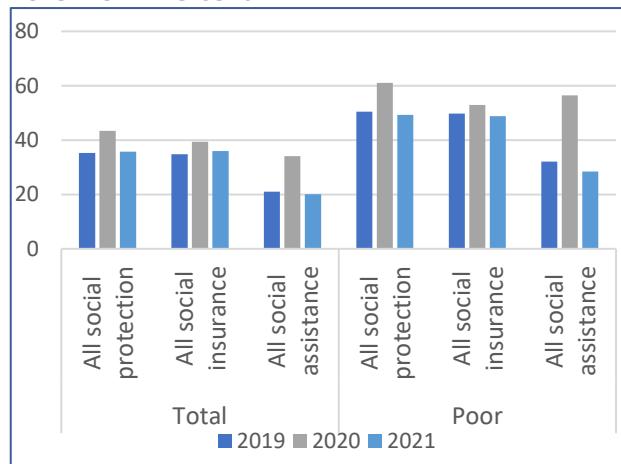
**142. The overlap of the six largest benefits is non-significant.** 75 percent of social protection beneficiaries are covered by social insurance, and 43 percent are covered by social assistance. The vast majority (76 percent) of all beneficiaries receive only one benefit (from the largest six), while 20 percent receive two benefits (Figure 45). Most of the remaining 4 percent of beneficiaries receive three benefits. Given that some of these benefits are universal or quasi-universal (such as the childbirth grant or childcare allowance) and Armenian households are multigenerational, a degree of overlap is to be expected. Among the poorest quintile based on post-transfer welfare, 41 percent receive 2 or more benefits. Within Social Assistance, most overlap is observed between

the Family Benefit Program and the Social Pension as about one fourth of FBP beneficiaries receive social pension and one third of social pension beneficiaries receive FBP. This aspect will be briefly discussed in Section 3.4.

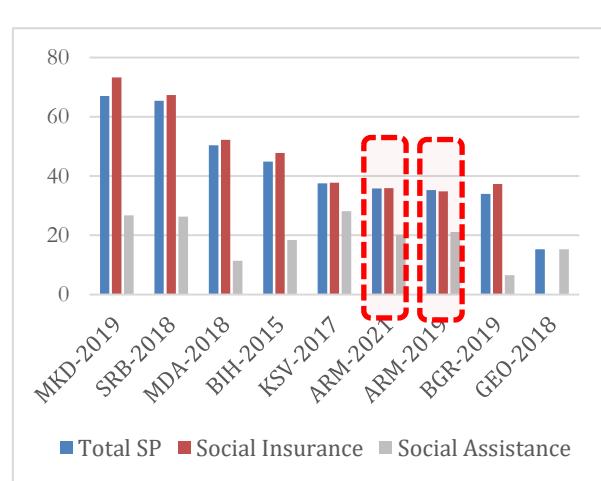
#### **143. The adequacy of social protection benefits is rather low, particularly for social insurance.<sup>119</sup>**

The combination of low total expenditure and sizable coverage of social protection in Armenia translates into a rather low adequacy of benefits, especially with respect to social insurance. On average, in 2021, social protection covered a little more than one-third of all beneficiaries' consumption (Figure 46). Compared to its peers, Armenia's social insurance benefits account for a lower share of beneficiaries' welfare (i.e., lower adequacy), at about 80 percent of the comparator countries' average (Figure 47). By contrast, the adequacy of social assistance benefits is closer to the peer countries' average.

**Figure 46. Social protection adequacy, Armenia 2019–2021. Percent**



**Figure 47. Benefits adequacy, all beneficiaries. Percent**



Source: ILCS 2019–2021, authors' calculations Note: The poor are defined as those with consumption levels below the national poverty line in the absence of social protection benefits.

Source: SPEED 2022. Database, Washington, DC: Note: The welfare indicator for all countries except Bulgaria is based on consumption. In Bulgaria, the welfare aggregate is based on disposable incomes.

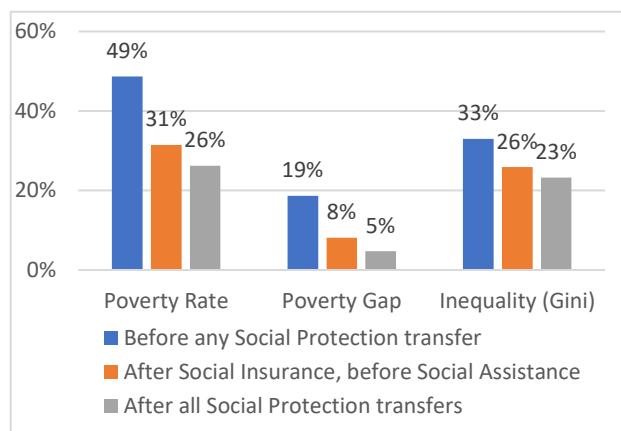
#### **144. In the absence of any social protection benefits, if households were unable to compensate from other sources of income, half of Armenians would live in poverty and inequality would increase by 40 percent.<sup>120</sup>** However, gaps remain. Even after the delivery of social protection transfers, one in four Armenians remains poor (Figure 48), and more than half (57 percent) of

<sup>119</sup> There is no single definition or indicator of social protection benefits adequacy. One reason is that social insurance benefits (such as contributory pensions) and social assistance are based on different principles, and different programs have different objectives. It is thus challenging to identify a single definition of adequacy that would apply to all social protection programs. In this section, we broadly define adequacy as the degree to which social protection benefits cover beneficiaries' consumption, or the ability of benefits to smooth out incomes (i.e., the share of benefits in the total consumption of beneficiary households). This measure is sometimes also referred to as generosity of benefits. See also Box 6.

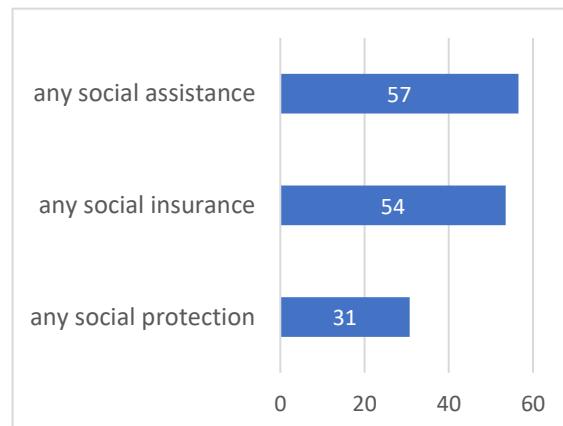
<sup>120</sup> Unless otherwise specified, the welfare indicator used in all analyses in this chapter is based on the household consumption per adult equivalent.

those who remain in poverty are not reached by any social assistance benefit (Figure 49). At the same time, there are many non-poor households who receive the benefits, suggesting that there is room for improvement in the targeting of programs.

**Figure 48. Impact of social protection benefits on poverty and inequality, 2021. Percent**



**Figure 49. Under-coverage of the poor after delivery of transfers, 2021. Percent**



Source: ILCS 2021, authors' calculations Note: Figures are calculated by simulating the absence of benefits. Small benefits (accounting altogether for up to 10 percent of spending on benefits) are excluded from calculations.

Source: ILCS 2021, authors' calculations Note: Poverty post-transfers is estimated at 26 percent in 2021

#### **145. Armenia's SP system does not seem well prepared to expand outreach in response to shocks.**

During the COVID-19 pandemic, the government protected the financing of regular programs and increased the SP budget to make room for additional spending. The share of social assistance benefits in the consumption of the poor almost doubled (from 32 percent in 2019 to 56 percent in 2020) as expenditure on social assistance rose and the value of benefits increased more than twice on average (vertical scale-up).<sup>121</sup> However, the rise in spending was accompanied by an increase of only 15 percent in the number of social assistance beneficiaries (horizontal scale-up), thus leaving many of the poor and vulnerable (particularly those in the informal sector) without support during the pandemic. This raises questions about the ability of the system to be shock-responsive, i.e., its capacity to identify and reach out to the most vulnerable families and individuals who are not already enrolled in the system and who need immediate assistance when impacted by large-scale shocks. Focusing on vertical scale-up might reinforce the bias towards existing groups that are already served by SP systems, which may not include all the vulnerable or those most affected by the shock.<sup>122</sup>

<sup>121</sup> Some social assistance benefits increased more than others. For example, the temporary increase in the Family Benefit was more than threefold.

<sup>122</sup> Survey data suggest that the response to the COVID-19 shock was effective but not particularly efficient. While the poverty rate and poverty gap did not increase, the benefit-cost ratio of social assistance benefits dropped. The benefit-cost ratio is measured as the poverty gap reduction in local currency units for each 1 unit spent on the social program (as discussed in Box 6). However, it is important to note that the efficiency lens needs to be applied to shock response measures with caution. In most cases, a "no regrets" approach (anticipatory action) is more suitable to shock-response interventions.

### Section 3.3: Old-Age Pensions

**146. Armenia's pension system was substantially reformed between 2014 and 2019.** The basic pensions (flat amount payable to anyone with 10 or more years of participation) and labor pensions (additional pension that varies with years of participation but not with salary) are now paid from the state budget rather than being financed from a social insurance fund.<sup>123</sup> The mandatory funded pension (Pillar 2) has been implemented, and as of July 2018 covers both public and private sector workers.<sup>124</sup> The primary objective of introducing Pillar 2 was to help address the challenges from high dependency ratio while also contributing to the deepening of the domestic debt market. This is reflected in the increased share of domestic debt financing of the budget and the lengthening of maturities (highlighted in Chapter 1).

**147. Additional pension reforms include:** (i) making the social allowance (social pension) payable from the budget to those who do not qualify for benefits from any of these pension pillars; and (ii) introduction of a minimum pension in 2019 payable to anyone with 10 or fewer years of participation in the pension system and to anyone for whom the sum of the basic and labor pensions is less than the minimum.<sup>125126</sup>

**148. Further significant changes to the pension system are envisioned under the 2021-26 government program.** The size of government contributions for the mandatory funded pension is expected to decline. In 2021, the government covered 65 percent of employees' contribution to their individual accounts and workers covered the remaining 35 percent at an estimated cost of 0.8 percent of GDP.<sup>127</sup> In 2022, the contribution fell to 55 percent, and in 2023, this is expected to decline further to 50 percent of employee's contribution. As a result, the estimated total cost is also estimated to decline to about 0.6 percent of GDP. Under the 2021-2026 government program, the government is proposing increases in the basic and labor pensions and in the minimum pension.<sup>128</sup> These increases, the relationship between various pension components, and changes in the allocation of mandatory funded pension contributions between workers and the government will have an impact on the budget, the adequacy of benefits, and the incentives of workers to participate.

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<sup>123</sup> The labor pension is calculated by a complex formula that considers two parameters set by the government as part of its annual budget process as well as a personal coefficient.

<sup>124</sup> Pillar 2 (funded pension pillar) is a mandatory pillar for employees born after January 1, 1974. The first pay-outs are anticipated around 2037, and beneficiaries will receive the sum of basic pension and funded pension. Retirees with work experience in Pillar 1 (labor pension) will also receive the labor pension for the years served before joining the Mandatory Pillar 2.

<sup>125</sup> The social pension is referred to in the administrative nomenclature as "Social Allowance for persons with disabilities, elderly, and survivors not covered by employment pensions." Due to its non-contributory nature, this benefit is discussed in more detail in the Social Assistance section of the report (Section 3.4).

<sup>126</sup> The minimum pension is not an additional pension. It is a guaranteed minimum level of pension for those who participated in the system but do not have enough years of contribution or have the years, but the amount of the pension benefit is still lower than the minimum.

<sup>127</sup> The total contribution is 10 percent of the wage. The government contribution has a cap for a wage of up to AMD 500,000 per month.

<sup>128</sup> Some increases were already introduced in 2022.

**149. Between 2019 and 2023, changing ratios among the various pension components have led to a relative decline in the average pension, primarily because the basic and minimum pensions have been increasing.** The minimum pension increased faster than the basic pension from 2020 through 2022-2023, while the factors used to calculate the labor pension have remained unchanged. This has resulted in a relative decrease in the labor and, implicitly, in average pensions (Figure 50). The continued decline in the ratios may undermine the internal structure and consistency of the pension system and jeopardize the benefits of those born before January 1, 1974, who depend on labor pensions for a significant portion of their retirement benefit. These individuals will be retiring between now and 2036. Moreover, if this trend were to continue, the minimum pension would eventually exceed the sum of the basic plus labor pension. As the size of the labor pension decreases, there is a greater incentive to avoid participation in the pension system and receive the minimum pension instead.

**Figure 50. Relation between basic, average, and minimum pensions, Ratio**



Source: MLSA statistics, authors' calculations

**150. Pensions expenditure is expected to reach 4.6 percent of GDP by 2026 from 3.9 percent in 2022 if policy commitments to improve benefits adequacy for the poorest pensioners are implemented.<sup>129</sup>** As per the 2021-2026 program, the government is considering bringing the minimum pension up to the level of the minimum food basket, or an estimated nominal increase of 58 percent, by 2026. This would improve the adequacy of pensions for the poorest pensioners but would imply an increase in nominal spending of 16.5 percent per year in the next three years. Assuming that the ratios of average to basic pensions and minimum to basic pensions envisaged for 2023 are maintained and the average length service stays the same, the state budget pension expenditure would reach 4.6 percent of GDP by 2026, from 3.9 percent in 2022 (Figure 54).

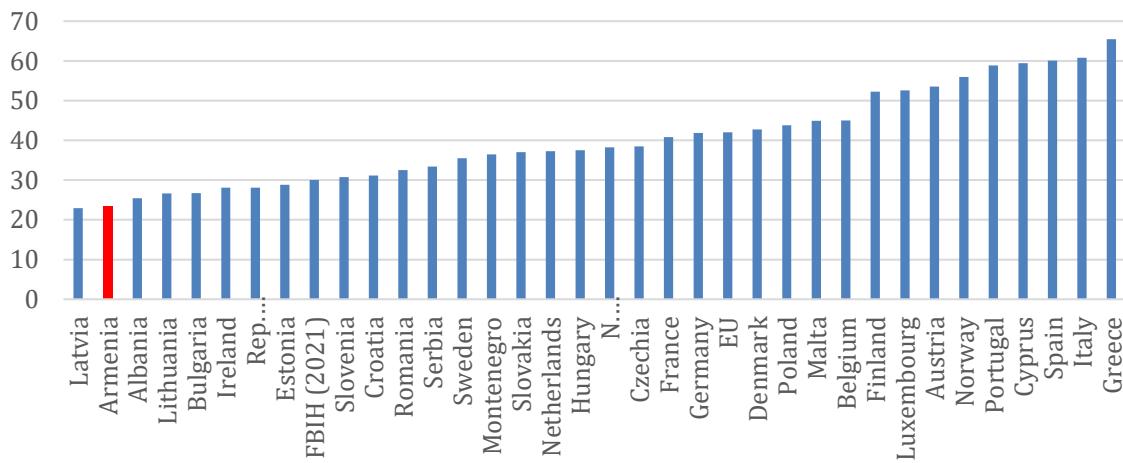
**151. Unless an increase in minimum pension is accompanied by a gradual but significant increase in the parameters used to calculate the labor pension, the average, basic, and minimum pensions will converge further.<sup>130</sup>** These parameters have been held constant for multiple years,

<sup>129</sup> This includes government contributions to Pillar 2, the cost of employment pensions, and the cost of social pension.

<sup>130</sup> To maintain the ratio of average to basic pension constant, the increase in the labor pension parameters would be around 60 percent between 2023 and 2026.

resulting in decreases of the employment pension (basic plus labor) **benefit ratio**, a measure of pensions adequacy, which is already one of the lowest compared with European countries (Figure 51).<sup>131</sup> If labor pension parameters were held constant going forward (i.e., the ratios between average and minimum pensions were not maintained) while the basic pension were allowed to increase in the same manner as the minimum pension, the average, basic, and minimum pensions will converge further. In the longer term, the government will have to assess and decide on the options for indexation of employment pensions (basic and labor). Annex 3.1 shows that in 2080, if benefits are indexed to inflation only, the male benefit ratio is expected to decline from 27.2% of the average nominal wage of contributors to 19.5%, a benefit reduction of almost 30%. Similarly, for females, the benefit ratio is expected to drop from 32.2% to 20.6%, an even larger drop of 36%. The simulations highlight that to avoid further decreases in adequacy, Armenia could consider options to ensure that employment pensions keep a reasonable relationship to the minimum or average wage.

**Figure 51. Pensions – average benefits ratio, 2019**



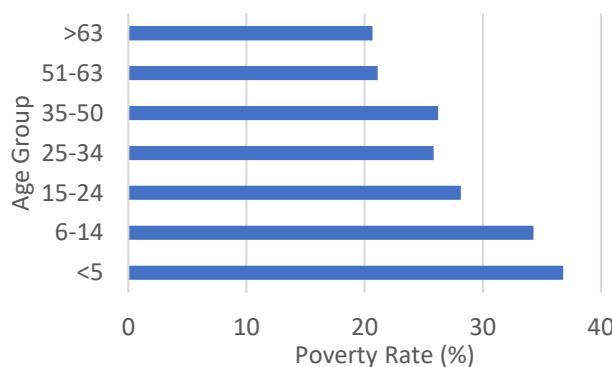
Source: The 2021 Ageing Report, European Commission (for EU countries); World Bank staff (for Armenia and Western Balkans, based on National Statistical Offices reports) Note: The benefit ratio is defined as the ratio between the average pension benefit and the economy-wide average wage

**152. Without the proposed increase in the minimum pension, the number of elderly living in poverty will increase significantly after 2025.** In 2021, the elderly population had the lowest poverty rate (21 percent) compared to other age groups (Figure 52). This is due to a large extent to the comprehensive coverage of employment pensions, which cover about 90 percent of the elderly. In contrast, those elderly who receive social pensions (the minimum pension) had a poverty rate of 36 percent after receiving transfers (compared to a poverty rate of 26 percent for the whole population). While the share of social pension beneficiaries is relatively small at present, the share of elderly who are eligible to receive employment pensions will decrease dramatically after 2025 (Figure 53). This is because, starting from the mid-1990s, many workers are no longer in formal employment. By 2030, the coverage of employment pensions is expected to decrease to about 70 percent, which means that in the future, a much larger percentage of the

<sup>131</sup> Because of the relative decrease in the labor pension, the ratio between the employment pension and the average wage decreased from 19.4 percent (2019) to 16.8 percent (2022) for men and from 27.4 percent (2019) to 25.2 percent (2022) for women (women have lower wages).

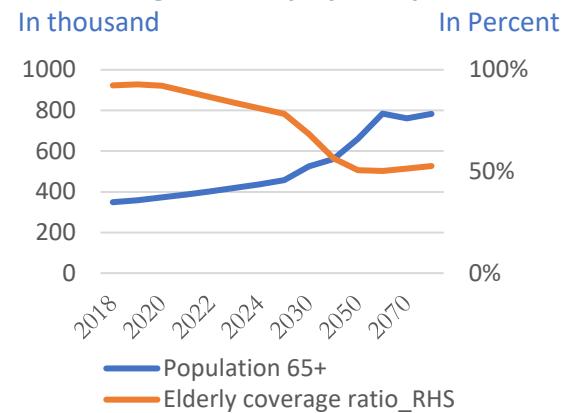
elderly will need to rely on social pensions. Combined with the increase in the elderly population, this will lead to a fourfold increase in the number of old-age social pension beneficiaries between 2021 and 2030. The forthcoming increase in the minimum and employment pensions (assuming the upward adjustment in the labor pension parameters) will better protect the social pension beneficiaries against poverty and will improve the adequacy of employment pensions. The benefit ratio (defined as the ratio between the average employment pension and the average wage) will increase from 17 percent (2022) to 22 percent (2026) for men, and from 25 percent (2022) to 33 percent (2026) for women.

**Figure 52. Poverty rate by age group, after transfers**  
Percent



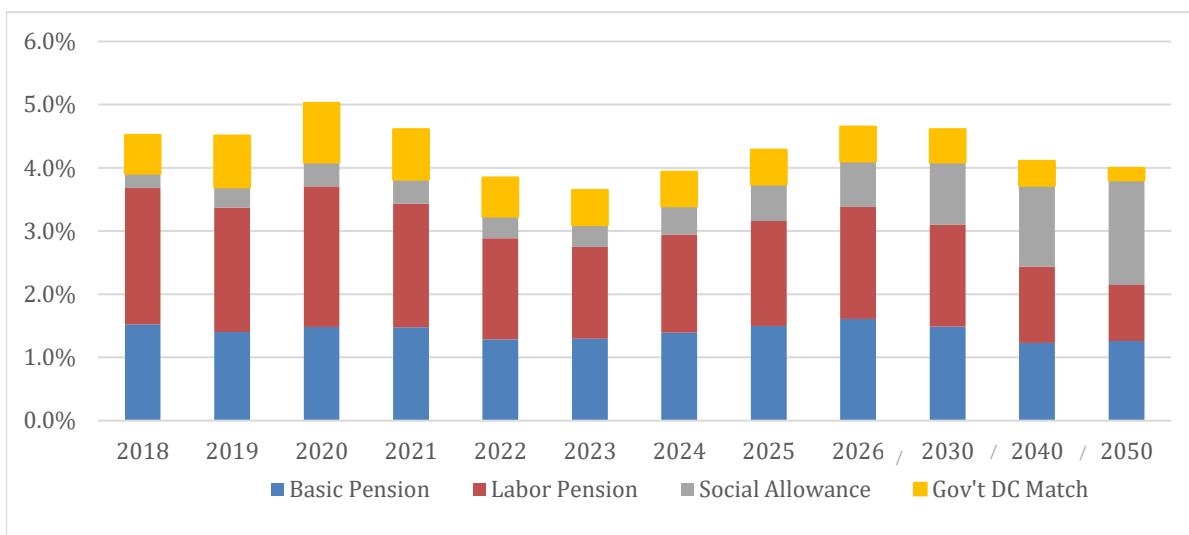
Source: ILCS2021, authors' calculation. The figures represent post-transfer poverty rates.

**Figure 53. Elderly (65 and older) population and coverage with employment pensions**



Source: Authors' estimates based on administrative data

**Figure 54. Projected state budget expenditure on pensions. Percentage of GDP**



Source: Authors' calculation using the Pension Reform Options Simulation Toolkit (PROST), assuming the same (2023) ratios of average/basic pension and minimum/basic pensions.

**153. Implementing policy commitments under the 2021-2026 government plan and introducing Pillar 1 pensions indexation will be fiscally sustainable<sup>132</sup> in the long run, provided certain conditions are met.** Actuarial simulations (see the summary provided in Figure 54) show that even if the basic and labor pensions are indexed to average nominal wage growth after 2026, the average cost of pensions in the long term (until 2050) is expected to remain sustainable, at around 4 percent of GDP. This assumes that the government portion of the contribution rate to Pillar 2 decreases to 3.7 percent by 2030 and then continues to decrease by 1-1.2 percentage points every 10 years and that the ratio of pension contributors to total employment in the country is maintained at around 60 percent.

**154. These simulations implicitly assume certain conditions that need to be met for fiscal sustainability.** *The first condition* is an increase in the retirement age, currently 63 for both men and women, which is low compared to other countries in Eastern Europe and in relation to Armenian life expectancy. The recommendation is for the retirement age to increase gradually by 3 months every year to reach at least 65 (reaching this level in 8 years). The increase in retirement age should be linked to the increase and automatic indexing of the basic, labor, and minimum pensions. Workers will retire later but receive higher and more certain benefits. Raising the retirement age has a double advantage for Pillar 2. More years of contributions leads to higher account balances at retirement, and annuitization over fewer years leads to higher pension benefits. *The second condition* is a phasing out of government financing of Pillar 2, which is putting pressure on the overall fiscal envelope. By law, the total contribution rate to the Pillar 2 is 10 percent. The government portion is 5 percent on wages up to a limit that is not indexed. This means that by design, over time, the government portion will decrease rapidly as wages increase and the wage cap for the government portion remains the same. Reducing the government portion more rapidly would create additional space for improving the adequacy of employment pensions. The phase-out should be no slower than under current law, but the pace of the phase-out needs to be moderated as an increase in required contributions from workers results in a direct reduction in take-home pay. *The third condition* is the elimination of potential disincentives for employees to participate in the pension system and to identify instead policies to promote participation. Additional pensions simulations highlight that instead of wages, if employment pensions are indexed to inflation (Annex 3.1), benefits will fall on average by 30 percent for males and by 36 percent for females by 2080, creating concerns of equity and political feasibility.

**155. The mandatory funded pensions introduced in 2021 will grow over time and contribute to the pension replacement rate of future cohorts of pensioners.** The expected replacement rates will be a function of how much, how often, and for how long people contribute to the scheme. A robust governance, investment, and communication policy is crucial to building trust in the system. As the government engages in landmark pension reforms, it is important to ensure coordination across policies and develop a transition roadmap with the goal of providing old age income security using a mix of instruments and ensuring intra- and inter-generational fairness.

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<sup>132</sup> We define long-term sustainability as pensions remaining relatively stable as a percentage of GDP and at about the same levels as the projections for the pension system today. If labor, basic, and minimum pensions are significantly increased, offsetting savings will be needed. This could come from faster phase-out of government contributions to Pillar 2 or an increase in the retirement age.

## Section 3.4: Social Assistance

**156. This section examines the state of social assistance in Armenia, reviews ongoing policy changes, and focuses on selected areas of interest regarding the main cash benefit programs.**

First, the section provides an overview of the performance of social assistance programs and highlights recent or forthcoming changes in the main programs. The section then examines two cash benefit programs in detail: (i) the Family Benefit Program, by reviewing the evidence regarding its outcomes, including the potential work disincentives generated by the program and the cost implications of shifting the vulnerability assessment system (VAS) to a hybrid means test (HMT); and (ii) the Child Care Allowance (CCA), by estimating the outcomes and cost of introducing a universal child allowance for children under 2. Finally, the section briefly reviews options for maintaining the affordability of the social assistance envelope given the costs incurred by various reforms.

**157. The chapter focuses on cash benefits, but it should be noted that social assistance also includes services.** These services support vulnerable households to address risks that go beyond the need for income support (Box 7), but given the additional complexity of the topic, service delivery is not covered in this report.

### Box 7. Social Assistance Service Delivery

Social assistance services (or social care services) are provided by both national and local governments. At the central level, the USS through its territorial centers offers various types of care services and case management services to citizens who require more in-depth and comprehensive support as well as intermediation and referrals to other services not provided by the state. At the community and municipal levels, community social workers are hired locally to support citizens with a range of services made available by local governments. Currently, there is no clear division of roles and responsibilities in social assistance across the different levels of governments, though a new Social Assistance Law covering these aspects is being drafted. Moreover, even though there are community social workers in most localities, there is no delegation of functions or mandates from the central to the local level for those activities that require presence at the local level, such as the verification home visits required for determining FBP eligibility. Given the complexity of the topic, service delivery in social assistance is not covered in this report.

## Section 3.4.1: Overview of Social Assistance Programs and Recent Policy Changes

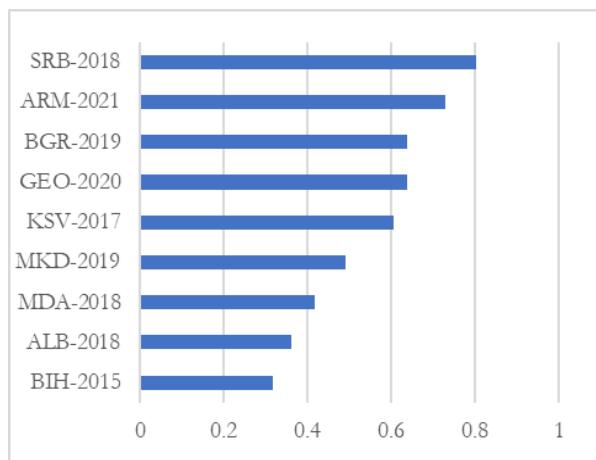
**158. While overall social assistance benefits are cost-effective and their coverage has increased significantly in recent years, one-third of the funds still goes to the non-poor and over half of the poor remain excluded from social assistance.** Except for the expenditures incurred during the twin shocks, between 2018 and 2021, Armenia spent consistently around 1.7-1.9 percent of GDP on social assistance, with cash benefits representing over 90 percent of this spending. During this period, total coverage with social assistance benefits increased from 18 to 26 percent of the population and coverage of the poorest quintile (pre-transfer) increased from 46 to 66 percent. In 2021, social assistance cash benefits covered about half (53 percent) of those living in poverty before receiving benefits.<sup>133</sup> Two thirds of the social assistance funds spent on cash benefits

<sup>133</sup> The population living in poverty before receiving benefits is also referred to as “pre-transfer poor.”

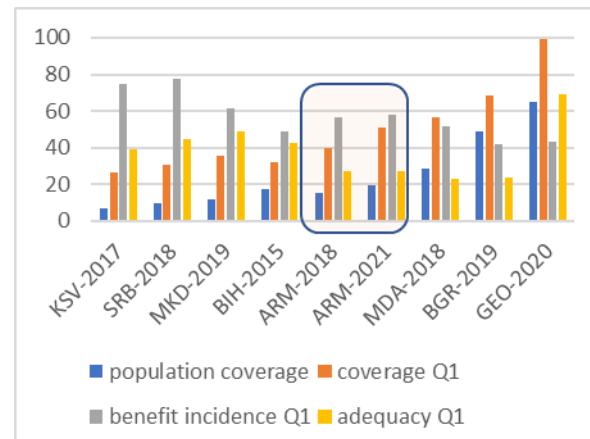
reached the pre-transfer poor, covering on average about 28 percent of their consumption, with a relatively high benefit-cost ratio of 0.77 (Figure 55, Table 9). In the absence of these programs, the poverty headcount would have increased by almost 20 percent in 2021 and inequality would have been 12 percent higher.<sup>134</sup> Even so, after delivery of social assistance benefits almost half (47 percent) of the bottom 10 percent of the population and 57 percent of those who remained below the national poverty line were still not covered by any social assistance cash program. Moreover, social assistance benefits reach only six out of ten children (0-14 years old) living in poor households before transfers. After transfers, one in three Armenian children remains in poverty.<sup>135</sup> At the same time, 36 percent of beneficiaries and 33 percent of expenditure on social assistance program benefit households above the poverty line, suggesting that there is room to improve the pro-poor targeting of the programs (Annex 3.2).

**159. Social assistance transfers in Armenia have a high benefit-cost ratio when benchmarked against other countries in the region (Figure 55).** However, from a comparative perspective, Armenia's social assistance performance with respect to protecting the poorest 20 percent of the population is mixed: coverage is above the average, incidence in the poorest quintile (targeting) is around the average, and adequacy of benefits lags most peers (Figure 56). Annex 3.2 provides an in-depth analysis of the coverage, incidence, adequacy, and impact on poverty and inequality of SA programs in 2021.

**Figure 55. Benefit-cost ratio, all social assistance**



**Figure 56. Coverage, benefit incidence, and adequacy of social assistance benefits, in percent**



Source: SPEED (Social Protection Expenditure and Evaluation Database). 2022.

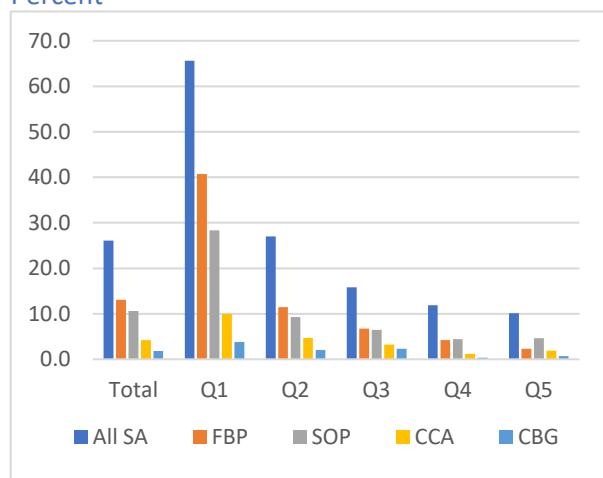
<sup>134</sup> The number of poor (the poverty headcount) is estimated according to the national poverty line. In the absence of social assistance benefits, the national poverty rate would have increased from 26 percent to 31 percent. Inequality is measured using the Gini coefficient.

<sup>135</sup> This chapter recognizes that social assistance is meant to address a diverse array of risks beyond monetary poverty, and thus effectiveness and efficiency of social assistance spending should not be assessed exclusively in relation to poverty targeting. However, the chapter also advocates prioritizing measures addressing poverty, in particular among children and youth, to protect and promote their human capital.

**160. The overall performance of social assistance benefits in Armenia is driven by five large programs that together account for nearly 80 percent of total social assistance expenditure.**

These include the Family Living Standards Enhancement Benefit (FLSEB), referred here as the Family Benefit Program (FBP), targeted to the vulnerable; the social pension (SOP) already discussed in Section 3.3;<sup>136</sup> the Maternity Benefits for mothers not working in the formal sector; the universal one-time Childbirth Grant (CBG); and the Childcare Allowance for children under the age of 2 (CCA), which until recently was targeted only to parents employed in the formal sector. In addition to these, social assistance includes many other smaller noncontributory benefits targeting various life-cycle events, risks, or socioeconomic groups. Data that allow for a more detailed analysis are available only for the FBP, CBG, CCA, and the social pension (SOP).

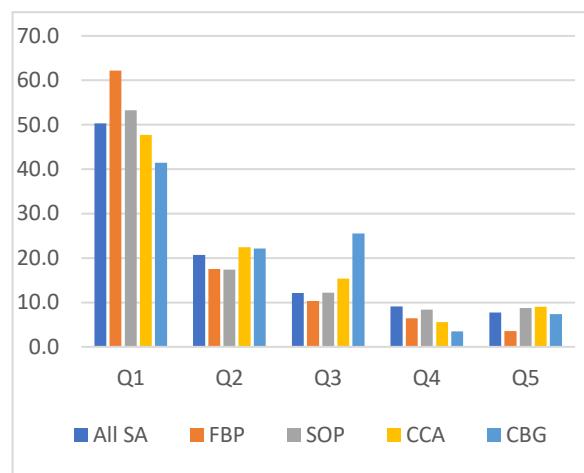
**Figure 57. Population coverage by main social assistance (SA) programs in Armenia, 2021.** Percent



Source: Author's calculations, ILCS 2021

Note: Quintiles are calculated based on pre-transfer welfare (consumption).

**Figure 58. Beneficiary incidence, main social assistance (SA) programs, 2021. Percent**



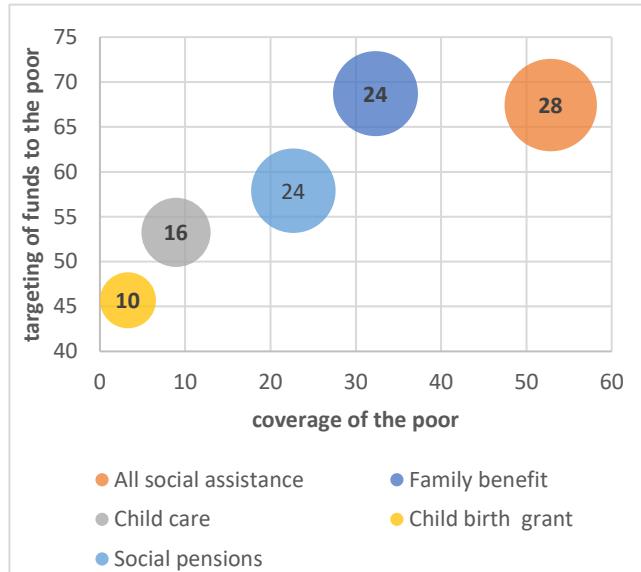
Source: Authors' calculation, ILCS 2021

Note: Quintiles are calculated based on pre-transfer welfare (consumption). Incidence is measured as distribution of program beneficiaries (not funds) over welfare quintiles.

**161. Until 2020, social assistance in Armenia relied to a large extent on the FBP and the SOP.** The FBP accounts for the second-largest social protection expenditure after old-age employment pensions (Table 8) and is the best performer among social assistance cash benefits (Figures 57-59). It includes three schemes: the Family Benefit for families with children, the Social Benefit for families (and single people) without children, and the Emergency Quarterly Assistance. The SOP is currently the second best performing social assistance benefit in terms of coverage, adequacy, and targeting (Figures 57-58). However, because 70 percent of its beneficiaries are persons with disabilities who are not always living in poor households, the

<sup>136</sup> The social pension is referred to in the administrative nomenclature as Social Allowance for persons with disabilities, the elderly, and survivors not covered by employment pensions.

**Figure 59. Social assistance programs performance in 2021.**



Source: ILCS, authors' calculation

Note: The performance of programs is benchmarked against the pre-transfer poor; the size of the bubble represents benefit adequacy. Targeting performance is measured as percent of program funds reaching the poor.

program has the lowest benefit-cost ratio amongst the four social assistance programs reviewed in this report.

**162. Since 2021, Armenia has embarked on significant reforms of its social assistance policies and programs.** At the policy level, the main elements of the reform include a reinforcement of the life-cycle risk approach, with consequent changes in the mix of social assistance benefits, the revision of the VAS (the targeting mechanism for the vulnerable), the modernization of information systems, and the piloting of the International Classification of Functioning, Disability, and Health (ICF) for disability assessment. These reforms are at different stages (concept, piloting, or rollout), but none has been fully implemented yet. These have been preceded by a broader institutional reform consolidating employment and social protection service delivery under the USS (Box 7).

**163. In addition to improving the adequacy of some of the benefits, two main reforms are envisaged by the government, to be fully rolled out by 2024, which will be examined in detail in the following sub-sections.** These are: (i) revision of the Vulnerability Assessment System (VAS), which includes the targeting system used to determine eligibility for FBP and other social assistance benefits; and (ii) expansion of the CCA in two phases. Overall, the reforms initiated are expected to modernize social assistance and improve its outcomes but will also entail additional cost.

**Table 9. Benefit-cost ratio, Armenia 2021**

	Benefit-Cost Ratio
<b>Family Benefit Program</b>	0.83
<b>Childcare Allowance</b>	0.79
<b>Childbirth Grant</b>	0.71
<b>All Social Assistance</b>	0.80
<b>All Social Protection</b>	0.66

Source: ILCS, authors' calculation

Note: The benefit-cost ratio is calculated against the national poverty line

***Reform 1: Revision of the Vulnerability Assessment System (VAS), which includes the targeting system used to determine eligibility for FBP and other social assistance benefits.***

**164. Current system and its limitations:** The VAS is currently based on a family vulnerability score combining coefficients assigned to 21 types of social groups, living conditions, place of residence, income, and utility bills, among others. Previous assessments have noted that the overly complex VAS formula was opening the door to significant errors of inclusion and exclusion, was not transparent for beneficiaries, and was difficult to implement. In addition, the high weights assigned to social groups combined with the relatively low importance of income in the calculation of vulnerability score was reducing the sensitivity of the FBP to changes in welfare. The combination of these design parameters made the program less dynamic and limited its targeting efficiency when compared to other countries (Figure 60). Moreover, there were concerns about possible disincentives to work generated by the program and about the risk of fraud.

**165. Proposed change:** The government plans to move away from the current vulnerability score approach and introduce a hybrid means-test based on incomes and assets (as eligibility criteria), with eligibility thresholds linked to the minimum food basket (MFB). This means that the FBP will become a last-resort safety net aiming to assist only those who, after receiving income from work and social protection benefits, still have an income gap relative to the eligibility threshold. According to this approach, the benefit levels will be calculated based on the difference between the eligibility threshold (adjusted for household size) and the total family income. The family incomes and assets as well as selected types of expenditures such as utility bills will be verified through administrative databases. Informal incomes (e.g., agricultural self-employment, casual labor, remittances) and income from productive assets will be imputed.

**166. Anticipated outcomes:** The benefit amounts of the reformed FBP are expected to be better correlated with incomes, more sensitive to changes in welfare, and more adequate due to the use of the minimum food basket as eligibility threshold. The reform is also expected to reduce overlaps between social assistance programs. Currently, about one third of SOP beneficiaries also receive FBP. The increase in SOP benefits together with increased emphasis on means-testing in FBP and alignment between minimum pension and FBP eligibility threshold are likely to reduce some of this overlap or the amount of FBP benefits paid to SOP beneficiaries.

***Reform 2: Expansion of the CCA in two phases***

**167.** In 2021, the program was expanded to all rural families with children under the age of 2, while remaining restricted in urban areas only to parents employed in the formal sector. In 2023 the program was expanded at national level irrespective of the place of residence, becoming thus a

universal child allowance for children under the age of 2, though with different benefit levels for parents in formal employment versus the others.<sup>137,138</sup>

**168. Finally, it should be noted that the size and composition of the SOP caseload is also expected to change significantly by 2030.** As discussed in Section 3.3, this is due to the four-fold increase in the number of workers who will reach the age of 65 and are not covered by employment pensions. The increase in caseload combined with the government's intention to gradually improve the adequacy of SOP benefits by linking them to the Minimum Food Basket (MFB) means that by 2030 the size of the SOP is likely to increase more than twice over while its cost would triple (reaching more than 1 percent of GDP). As the introduction of the International Classification of Functioning, Disability and Health (ICF) for disability assessment advances, the government may consider the costs and benefits of splitting the SOP into two separate programs (or distinct components of the same program) – one for the elderly not receiving employment pensions and one for persons with disabilities, as the two groups have different needs regarding the mix of income support and services and different eligibility determination procedures. Moreover, it is likely that the administrative costs for assisting these two groups will be different.

#### Section 3.4.2: The Family Benefit Program: Current outcomes and expected impacts of the reform

**169. The FBP is the largest social assistance program in the country, estimated to cover about 13 percent of the total population in 2021.** The program reaches only about half of the poorest 10 percent of the population and only 40 percent of the bottom consumption quintile (Figure 57). Despite the low coverage of the poorest, the impact on poverty has been noticeable: if FBP were suspended and beneficiaries were unable to compensate for the loss, the poverty headcount would increase by 9 percent and the poverty gap by one-third. The inclusion error of FBP for the highest three quartiles is 13 percent.

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<sup>137</sup> Parents not in formal employment will receive a lower amount than parents in formal employment. The amount will be the same irrespective of the place of residence or registration. Benefit levels for parents in formal employment are differentiated based on the place of residence, with beneficiaries residing in rural areas receiving a higher benefit level.

<sup>138</sup> In addition to these two reforms, the government introduced in 2022 a monthly child allowance (AMD 50,000) for the third and subsequent child until the age of 6 born after January 1, 2022. This new program is not reviewed in this report due to its small size relative to others. While such a program can be expected to be well targeted to the poor, it will contribute to the fragmentation of social assistance.

**170. The FBP targeting performance (benefit incidence) and adequacy of benefits is lower than for peers in the region.**

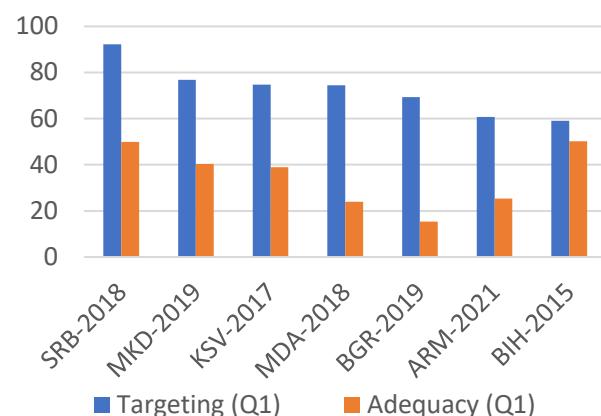
The program transfers only 60 percent of benefits to the bottom consumption quintile, and the adequacy of benefits is lower than the average of comparator countries (Figure 60). Improving the program's targeting performance would help increase coverage of the poor and thus the impact on poverty.

**171. The reform of the Vulnerability Assessment System is expected to significantly improve FBP targeting performance, coverage of the poor, and the adequacy of benefits.<sup>139</sup>** The choice of design parameters—eligibility threshold, benefit amount, additional eligibility conditions or restrictions, and so on—for

the new approach will significantly affect the effectiveness, efficiency, and affordability of the FBP. Depending on the choice of eligibility threshold, coverage of the poorest income quintile is estimated to increase from the current 32 percent to between 50 and 64 percent (Table 10). According to simulations, the share of program funds transferred to the bottom income (not consumption) quintile (targeting performance) is expected to reach 83-85 percent (compared to the current 45 percent), and adequacy of benefits would range from 48 to 54 percent (Table 10).<sup>140</sup>

**172. The success of the VAS reform will also depend on complementary actions.** The success and cost-effectiveness of the program will depend firstly on implementation arrangements: involving the community workers in selected processes and activities at local level (such as home visits to verify the living conditions of applicants) is likely to be more cost-effective than mandating the USS staff to travel long distances and can build synergies between the income support provided by the national government and the services provided by local governments. Secondly, the success of the reform will also require upfront investments in the modernization of the current information systems and the digitalization of the verification of means (incomes and productive assets), which needs to rely on automatic checks of information from interoperable administrative databases. In addition, the government will have to develop systems to address error and fraud. To prevent the risk of noncompliance, error, and fraud not only by applicants and beneficiaries but also by implementers, the government should consider introducing a social

**Figure 60. Targeting and adequacy of last resort social assistance. Percent**



Source: Authors' calculations

Note: For Bulgaria the welfare indicator is based on disposable incomes. Q1 = First quintile.

<sup>139</sup> The expected impacts of the reform were simulated using survey data (ILCS 2019) and utilize a welfare aggregate based on household incomes, not consumption, due to data limitations.

<sup>140</sup> The simulations assume that reported formal incomes in the survey are consistent with the incomes recorded in administrative databases. Informal incomes were estimated and imputed based on empirical data models.

inspection unit to oversee compliance with regulations, standards, and Standard Operating Procedures (SOPs).

**173. Without accounting for the reform of other programs, the cost of FBP is expected to increase because of the VAS reform.** Table 10 presents four scenarios that assume perfect implementation, no additional eligibility conditions or restrictions beyond the means test,<sup>141</sup> and no interactions between the FBP reform and other reforms. Depending on the scenario selected, the cost of the program would increase compared with the baseline (2019) by 10 to 70 percent (not accounting for inflation). These estimated increases represent upper limits as they do not account for the expansion of the childcare allowance and for the increase in the social pension benefit level (up to the Minimum Food Basket, MFB), which will increase the incomes of those programs' beneficiaries and thus reduce the cost of the FBP. Moreover, once additional eligibility conditions or restrictions are applied, the estimated coverage and cost of the FBP are expected to be smaller.

**Table 10: Vulnerability assessment system reform – Cost of options**

	Eligibility threshold	Benefit amount	Coverage Q1	Share of beneficiaries from Q1	Share of funds to Q1	Adequacy	Cost in 2019, billion AMD	Benefit -Cost ratio
Baseline: Current vulnerability assessment	-	-	32.4	50.0	45.4	38.8	30.1	0.52
Scenario 1: families with incomes less than the MFB get the full difference (gap) between their incomes and the MFB (adjusted for household size)	100 percent MFB	100 percent gap	63.5	83.2	83.3	53.7	51.4	0.82
Scenario 2: families with incomes less than the MFB get <b>90 percent of the difference</b> (gap) between their incomes and the MFB (adjusted for household size)	100 percent MFB	90 percent gap	63.5	83.2	83.3	51.1	46.2	0.82
Scenario 3 ( <b>preferred</b> ): families with incomes less than the MFB get 80 percent of the difference (gap) between their incomes and the MFB (adjusted for household size)	100 percent MFB	80 percent gap	63.5	83.2	83.3	48.2	41.1	0.83

<sup>141</sup> For example, the simulations do not consider car ownership as an exclusion criterion.

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Scenario 4: families with incomes less than 80 percent of the MFB get the full difference (gap) between their incomes and 80 percent of the MFB (adjusted for household size)	80 percent MFB	100 percent gap	50.2	84.5	83.6	52.9	32.7	0.82
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Source: ILCS 2019, authors' calculations

Notes: MFB – Minimum Food Basket (adjusted for family or household size). Coverage, targeting, and adequacy are estimated based on household incomes, not consumption, due to data limitations. The scenarios were simulated using 2019 data.

**174. There is little scope for the activation of current FBP beneficiaries as only 3.5 percent of those able to work are inactive.<sup>142</sup>** Only one-quarter (89,000) of FBP beneficiaries can genuinely be expected to be engaged in the labor market. This low potential labor force participation among beneficiaries reflects the fact that FBP families include large numbers of older people, children, or people with severe disabilities<sup>143</sup> as well as many caretakers given the higher share of dependents. Of this potential workforce in the FBP, only 13,000 are inactive (not working and not looking for a job) compared to a total population of 144,000 inactive persons. In view of the limited capacity of employment services in Armenia (see next section) and the high likelihood that FBP beneficiaries have multiple barriers to employment, expectations about their activation should remain moderate.

**Table 11: Beneficiaries of the Family Benefit Program**

	Beneficiaries	Nonbeneficiaries	Share of beneficiaries in the category
Total population	372,537	2,512,421	12.9%
Working age (WA) 18–63 population	173,644	1,596,078	9.8%
Able WA population not studying	147,531	1,415,333	9.4%
Able WA population not studying and not caretaker	88,984	1,076,988	7.6%
Inactive able WA population	12,917	131,410	9.0%

Source: Armenia Integrated Living Conditions Survey (2019)

**175. While available evidence does not confirm the hypothesis that the current design of FBP leads to inactivity, beneficiaries are more engaged in informal work or are unemployed.** Previous studies found that FBP does not generate systematic disincentives to participate in the labor force. Ersado and Levin (2011) studied the impact of the FBP on labor market participation in 2009 and found that the program does not generate systematic disincentives to participate in the labor

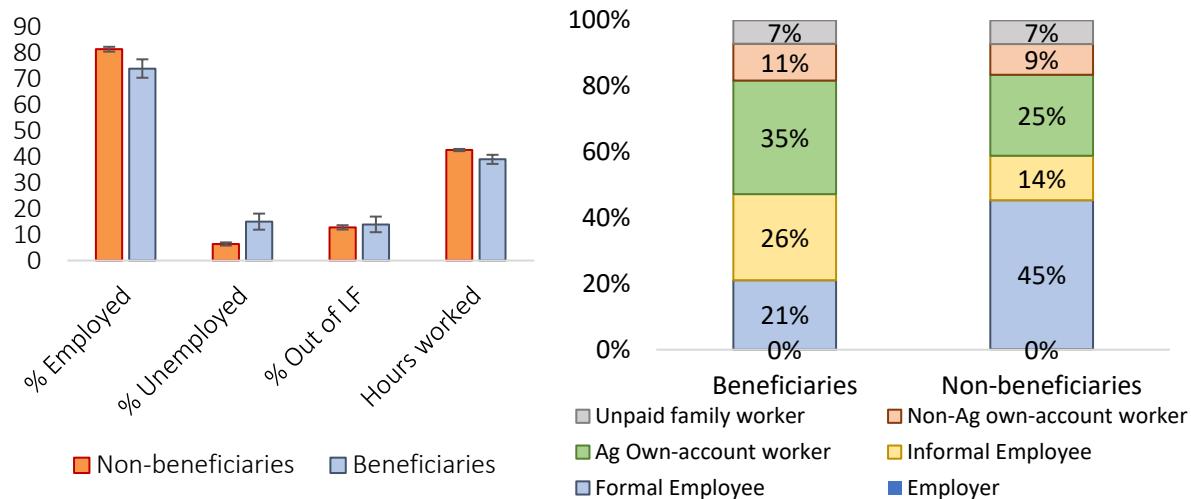
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<sup>142</sup> Activation is tackling barriers to engaging inactive populations in the labor market, for example through ALMP, but it does not necessarily mean employment since they can be searching for employment, which is a form of activation (compared to not searching for employment). We define as “inactive” a working-age person who is not part of the labor force, meaning that he or she is neither employed nor seeking work.

<sup>143</sup> This is the case by design because the presence of these groups of individuals increases the vulnerability scores and thus the chances of a household of being selected to the program.

force among the group of workable people who are neither studying nor caretakers.<sup>144</sup> In 2019, a similarly low share of this potential workforce was inactive among beneficiaries (13 percent) and nonbeneficiaries (14 percent) (left panel of Figure 61), suggesting a limited negative impact of the program on labor market participation. On the other hand, being in the program is associated with a slightly smaller number of hours worked and lower formal employment rates (right panel of Figure 61), with 26 percent beneficiaries working as informal employees compared to only 14 percent of nonbeneficiaries. These results remain largely unchanged when comparing beneficiaries and nonbeneficiaries that are in the bottom 20 or 40 percent of the population. Regression analysis controlling for differences in observable characteristics between the two groups such as gender, age, education, income, number of people with disabilities in the family, or location show similar findings (Annex 3.3) although limiting features of the data do not allow for fully controlling for endogeneity.

**Figure 61. Labor market status of “able” beneficiaries and nonbeneficiaries of the FBP**



Source: Armenia Integrated Living Conditions Survey (2019), authors' calculations

Note: Left panel indicates the probabilities on the status of the beneficiaries/nonbeneficiaries.

**176. Even if worries about large negative effects of FBP on participation in the labor market in Armenia do not seem to be warranted, it is important for the reformed FBP to maintain and enhance features that are incentive-compatible with (formal) employment.** The pre-reform FBP features such as the limited link between eligibility and current income levels were likely playing an important role in minimizing the disincentivizing effects to work (Banerjee et al., 2017). The introduction of eligibility determination based on an income threshold may lead to increased risks of work disincentives or informal employment. While imputing informal incomes is expected to minimize the incentives to reduce formal employment to retain eligibility, these risks will need to be systematically monitored during the first years after the reform is implemented. Detaching the employment status of family members from the eligibility criteria (beyond family income or assets), allowing for in-work benefits, and adding phase-out periods for withdrawal from program benefits can further reduce the disincentive effects on employment. It is also important to

<sup>144</sup> This limits the comparability of results with other contexts. The population of interest deviates from other international studies comparing beneficiaries and non-beneficiaries that are not only of working age but also able to work, excluding students, people with disability, and caretakers.

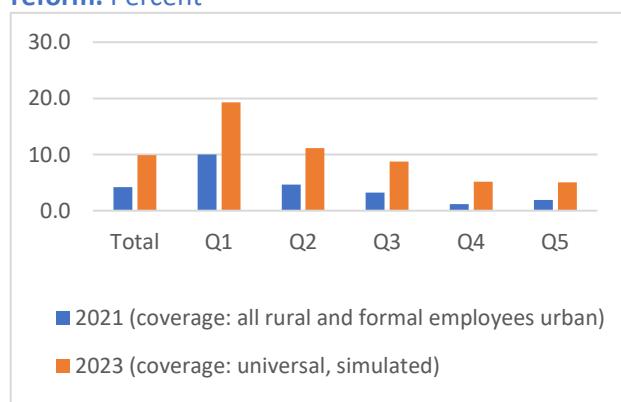
monitor the share of benefits in relation to prevailing wages. In 2019, the average benefit rose to AMD 31,350, or 30 percent of the average wage in 2019 at the time (World Bank and UNICEF, 2020). Systematic monitoring and evaluation should be used to inform the impact of such changes on labor market participation.

#### Section 3.4.3: Expected outcomes and cost of Childcare Allowance (CCA) reform

**177. The full expansion of the CCA at the national level would improve total social assistance coverage of the poor, with moderate impact on poverty.** As mentioned above, in 2023, the CCA program will be expanded at national level irrespective of the place of residence, thus becoming a universal child allowance for children under the age of 2, though with different benefit levels for parents in formal employment versus the others. With an expected cost of about AMD 20 billion (up from AMD 8.7 billion in 2021), the program will further reduce the poverty rate by about one percentage point and increase the social assistance coverage of the poor to 57 percent (from 53 percent in 2021). As expected from a universal program not targeted to the poor, about half of the benefits will reach families that are not living in poverty. However, given the high poverty rate of children and the exclusion errors of the VAS, the expanded program represents an effective option for closing the coverage gap for families with toddlers living in poverty.

**178. While there were expectations that expanding the CCA might support female labor force participation and employment, initial analysis does not suggest such an impact.** Quasi-experimental analysis comparing rural mothers who have children under 2 with those who have children aged 2-4 before and after the increase in coverage in 2021 fails to show any significant positive impact (see Annex 3.4). Taking advantage of the phased rollout of the program, the government should consider introducing a rigorous impact evaluation of CCA to better understand what course corrections would strengthen the intervention, including the potential introduction of a simple (automated) affluence test to limit the program to the bottom 2 or 3 income quintiles.

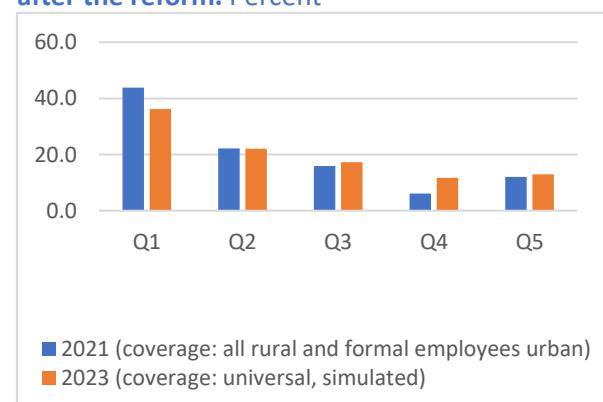
**Figure 62. CCA coverage, before and after the reform. Percent**



Source: Author's calculations, ILCS

Note: Quintiles are calculated based on pre-transfer welfare (consumption). The year of the baseline scenario for simulations is 2021, when the program covered all rural parents and the formal employee parents in urban areas.

**Figure 63. CCA benefit incidence, before and after the reform. Percent**



Source: Authors' calculation, ILCS

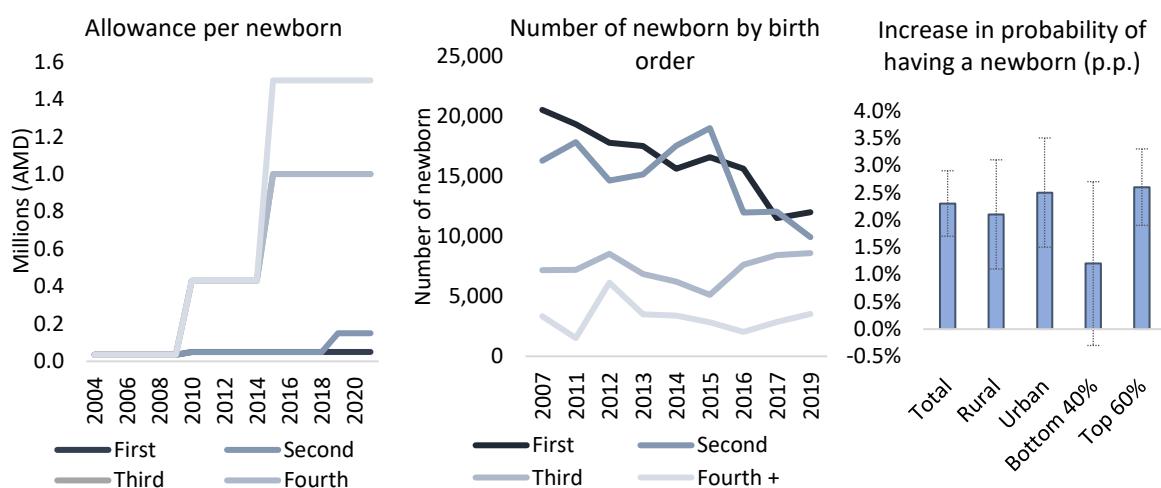
Note: Quintiles are calculated based on pre-transfer welfare (consumption). The year of the baseline scenario for simulations is 2021, when the program covered all rural parents and the formal employee parents in urban areas.

#### Section 3.4.4: Options for maintaining the affordability of social assistance

**179.** Once the VAS and CCA reforms are implemented, it is estimated that the social assistance cost will likely increase by 0.15 percent of GDP. While both reforms are fully justified, the government should consider looking for options to compensate for these cost increases, including: (i) reducing spending on larger programs that are less cost-effective relative to their stated objectives; (ii) targeting the CCA by introducing simple affluence tests, as suggested above; and (iii) phasing out some of the many small programs that contribute to the fragmentation of social assistance and possibly increase administrative costs. However, in the absence of evidence about their outcomes, it is difficult to say which of the small programs would be the best candidates. Therefore, a first step to identify potential candidates would be to put in place an evaluation plan and framework.

**180.** A possible candidate for curbing spending in the category of larger programs is the childbirth grant (CBG), which is aimed at incentivizing fertility. The program consists of a one-off payment that varies depending on the birth order of the newborn, with larger benefit levels for each third and above child. While quasi-experimental difference-in-difference analysis confirms the positive association between the monetary increase in the CBG amount and the fertility rates for women having their third child compared to those having their second one, it also comes at a very high cost per additional birth. For example, it is estimated that the increase in the CBG benefit in 2015 was associated with an increased probability of 2.3 percentage points of having a child (right panel of figure 64). This translated into 4,000 more births in the country (a 9 percent increase in natality), with an additional cost to the public finances of AMD 7 billion (at 2016 prices). Larger effects were observed in families in the top 60 percent of consumption, with no significant impacts on poorer households that already had higher fertility rates prior to the policy change. Concerns about the program's limited cost-effectiveness overall and the lack of evidence of the impact of financial incentives for families with no children (or only one child), would suggest freezing the current benefit levels.

**Figure 64. Size of CBG and number of births by birth order in the family**



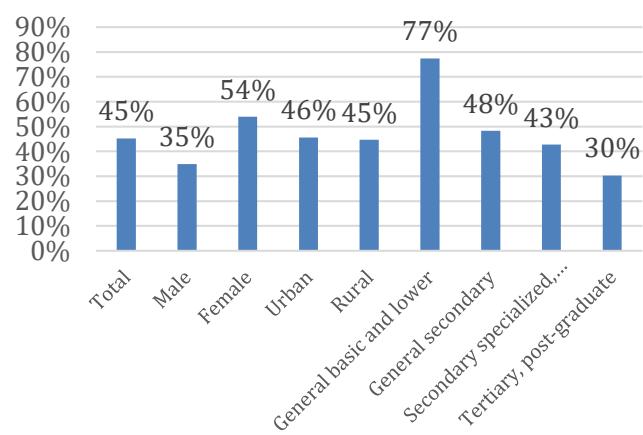
Sources: Mutual Information System Social Protection – Council of Europe and Integrated Living Conditions Survey  
Note: The increase in fertility associated with higher financial incentives is based on regression analysis (Annex 3.5).

## Section 3.5: Active Labor Market Measures

**181. As a result of limited job creation, Armenia has been facing persistently high levels of labor market exclusion over the last decade.** The percentage of the population outside the labor force has been steadily rising in recent years, from 37 percent in 2013 to 45 percent in 2020, a rate significantly higher than the OECD average of 29 percent. These high levels of economic inactivity are accompanied by high levels of unemployment, hovering around 18-19 percent since 2010 (18 percent in 2020). Inactivity is particularly pronounced among women (54 percent) and people with low levels of education (77 percent) (Figure 65). Similarly, young people are facing a difficult transition from education to work, reflected in a large share of youth not in employment, education, or training (NEET). NEET rates are particularly high for older youth (25-29) and for young women (Figure 66), who often drop out of the labor market due to family or care responsibilities as family formation begins.<sup>145</sup>

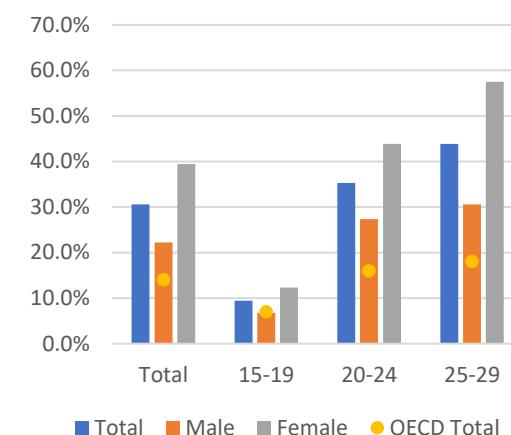
**Figure 65. Share of the population outside the labor force (2020)**

In percent



**Figure 66. Share of youth ages 15–29 not in employment, education, or training (2020)**

In percent



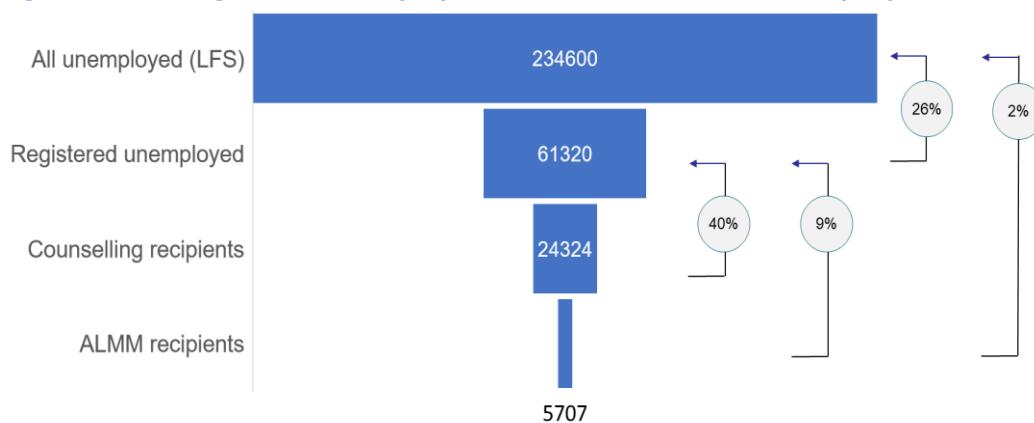
Source: Labor Force Survey 2020, authors' calculations

Source: Labor Force Survey 2020, authors' calculations

**182. Public Employment Services (PES) only reach and serve a small share of the unemployed.** Of the total number of unemployed, only about one-quarter (26 percent) are registered with the PES. In addition, only a limited share of those registered benefit from services, which can negatively affect the reputation of PES and reduce incentives to register in the first place. The share of registered unemployed receiving some type of counseling is 40 percent (about 10 percent of all unemployed), and only 9 percent participate in Active Labor Market Measures (ALMM) (about 2.3 percent of all unemployed) (Figure 67).

<sup>145</sup> The average age of women at the birth of their first child is 25 years.

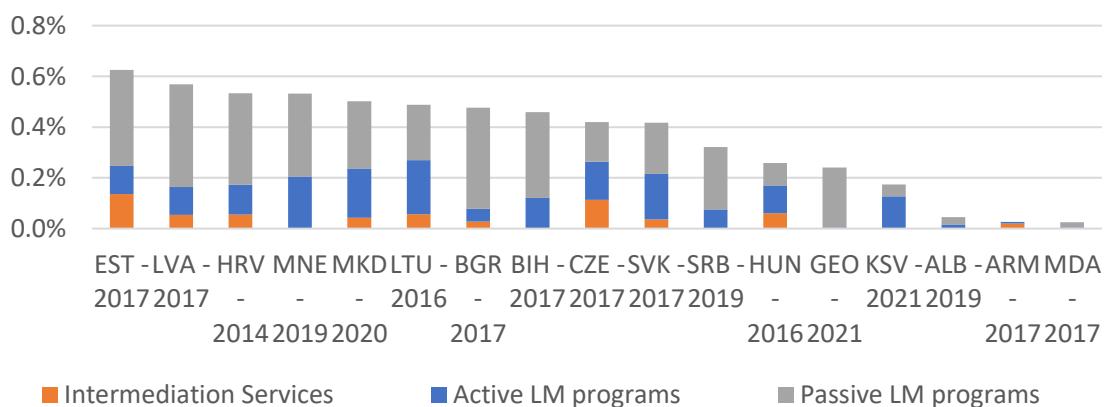
**Figure 67. Coverage of Public Employment Services (PES) (number of people covered)**



Source: ArmStat

**183. The number of vacancies reported to the PES by employers is low and only covers a small share of jobseekers.** The number of employers registered with the PES has grown steadily in recent years, from 18,628 in 2018 to almost 22,000 in 2021. That said, only a small fraction of these employers (10-18 percent) report vacancies to the PES. Due to the low share of employers who are reporting, the number of vacancies reported fluctuates strongly and could only cover a small share of total registered jobseekers (7-17 percent since 2018). Such limited coverage of jobseekers makes large-scale job intermediation and placement difficult, though it must be noted that there are strong differences by region. With most vacancies being reported in Yerevan (43-50 percent depending on the year), the share of jobseekers covered in Yerevan was 39 percent in 2021, followed by Vayots Dzor (18 percent) and Syunik (12 percent). In most regions, however, the number of reported vacancies covered only 4-7 percent of registered jobseekers. Aside from differences in the availability of employment opportunities by region, the generally small share of reported vacancies may reflect firms' poor familiarity with PES products and services, their unwillingness to collaborate with PES for recruitment purposes, or the limited capacity of PES counselors to engage and network with the private sector.

**Figure 68. Public Spending on Labor Market Programs and Services. Percent of GDP**



Source: Social Protection Expenditure and Evaluation Database (SPEED), World Bank

Note: Passive LM Programs consist mostly of unemployment cash benefits (insurance and/or assistance)

**184. While the financing of ALMMs is small by international standards, underspending of allocated funds is common and operating costs are high.** Public spending on ALMMs is around 0.02 percent of GDP in 2021, significantly lower than international standards (Figure 68). Underspending of allocated funds is common: in recent years the disbursement ratio of allocated funds for ALMMs has been stable, at about 80 percent.<sup>146</sup> Moreover, compared to countries such as Estonia, Hungary, and Latvia, Armenia's operating costs as a share of the total cost of employment services and active measures is high, at almost 40 percent. For comparison, in 2019 Estonia, Hungary, and Latvia had operating costs of 15, 8, and 9 percent, respectively.<sup>147</sup> High operating cost can be due to several reasons, including: (i) low spending on actual measures and services compared to components of the operating cost that are difficult to adjust such as salaries of permanent staff who cannot be re-allocated to other activities; (ii) fragmentation of measures and the lack of economies of scale (about two-thirds of measures had less than 500 beneficiaries in four years between 2018 and 2021); and (iii) the low level of digitization and the lack of effective operational tools and business processes.

**185. It should be noted that the data needed to analyze the effectiveness of the ALMM programs are not available.** At present, data are not collected that would allow for a rigorous assessment of the effectiveness of these programs. This impairs the possibility of making evidence-based decisions as to which programs should be scaled up and which should be closed down. However, available information on spending suggests a possible mismatch between the programs and the needs of the labor market.

**186. The largest share of funding for ALMMs goes to rural self-employment support, though this does not entirely correspond to the profile of the registered unemployed.** Within the portfolio of ALMMs, the largest share of funding in recent years (44 percent) has gone to (mostly rural) self-employment support, with significantly less funding for direct financial assistance (23 percent), training-related measures (20 percent), wage subsidies (10 percent), and public works (4 percent). These funding allocations are also reflected in the number of beneficiaries per type of ALMM (37 percent for self-employment support). The strong emphasis on self-employment support for agriculture does not align well with the profile of registered jobseekers, who come primarily (59 percent) from urban areas. The larger size of the rural self-employment programs is not necessarily a reflection of higher demand but rather a policy decision.

**187. Funding for Active Labor Market Measures is allocated relatively evenly across regions, reflecting regional targeting criteria that only partially capture unemployment rates.** Allocations for the number of potential program beneficiaries and respective funding by region are made centrally based on a formula that captures eight criteria.<sup>148</sup> The result of this formula is a rather uniform distribution of funds (and beneficiaries) across regions, with Yerevan and Shirak accounting for the highest shares of total funding (13 percent each in 2021) (Figure 69). To put

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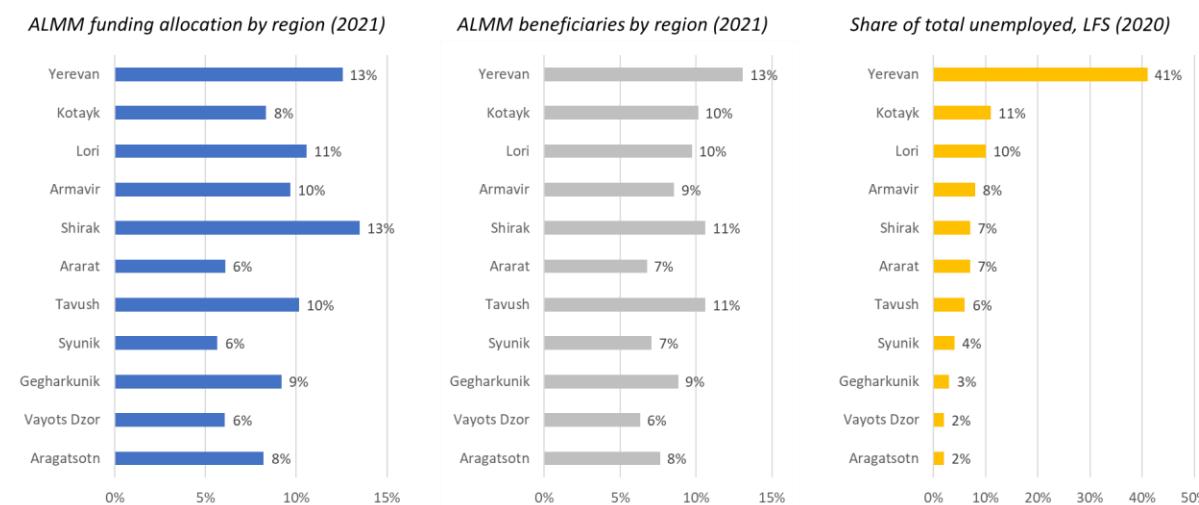
<sup>146</sup> The reasons for underspending vary by year, being related to the twin crises but also to government decisions to freeze some of the spending for evaluation purposes.

<sup>147</sup> OECD (2022), "Public spending on labor markets (indicator)." <https://doi.org/10.1787/911b8753-en> (accessed on February 5, 2023).

<sup>148</sup> The eight criteria are, by region: 1) planned resources for program implementation; 2) number of jobseekers; 3) number of families registered in the vulnerability assessment; 4) funds spent in the previous year; 5) number of unemployed; 6) number of people placed in jobs; 7) number of non-recurrent vacancies; and 8) predicted number of vacancies and newly created jobs. The weights for each criterion are set by special ministerial order and are set differently for each ALMM.

these numbers in perspective, over 40 percent of the country's unemployed are in Yerevan and 7 percent in Shirak, suggesting that regional funding allocations and the number of ALMM beneficiaries do not always match the regional distribution of unemployed and needs.

**Figure 69. Distribution of ALMM funding and beneficiaries, by region**



Source: MLSA, authors' calculation

**188. The registered unemployed who do not participate in ALMMs face more constraints to employment than those who participate.** Most registered unemployed face 2-3 simultaneous constraints.<sup>149</sup> Available data suggest that there may be an implicit bias in the selection of ALMM beneficiaries, favoring those with fewer constraints on employment (that is, those who are relatively easier to place or employ): 63 percent of the registered unemployed who do not participate in ALMMs face one or more constraints on employment compared to only 18 percent of ALMM beneficiaries. Even though about 30 percent of registered unemployed are tagged as long-term unemployed, only about 10 percent are placed in internships (work practice) or vocational training programs.<sup>150</sup> Moreover, although 24 percent of the registered unemployed are tagged as lacking work experience, only 8 percent of internship program beneficiaries are unemployed who lack work experience.

**189. Some ALMMs seem to be helping jobseekers find employment faster than nonbeneficiaries.** While there is no robust evidence of a positive impact of ALMMs on the probability of beneficiaries to find employment, there is evidence that certain programs have helped participants to find employment faster than nonbeneficiaries. Overall, the probability of the registered unemployed being employed within 6 months after ALMM completion is rather low: 30 percent for internship (work practice) beneficiaries and 8 percent for vocational training

<sup>149</sup> This analysis uses the PES classification of constraints on employment, consisting of 12 different uncompetitiveness categories: childcare, disability, lack of work experience, long-term unemployed, war veteran, ex-convict, refugee, socially disadvantaged, unemployed between 3 and 12 months, no profession, living in a remote area, and returning from the military. The analysis aggregates up to the 6 categories most frequently encountered.

<sup>150</sup> Even though more than 70 percent of registered unemployed have been in the system for longer than 12 months, only 30 percent are formally tagged as long-term unemployed. The reasons are unclear.

beneficiaries.<sup>151</sup> The corresponding figure for nonbeneficiaries is 15 percent. Because of data constraints and differences between the characteristics of beneficiaries and of nonbeneficiaries, these figures do not allow for conclusions about the relative impact of programs.<sup>152</sup> However, the data suggest that internship programs have enabled beneficiaries to find employment more quickly than vocational training beneficiaries, although vocational training beneficiaries still found employment faster than nonbeneficiaries. The internship programs appear to have enabled beneficiaries without employment constraints to find a job within 4 months of completing the program.

**Table 12: Number of days needed to find a job: ALMM beneficiaries compared to nonbeneficiaries (calculation for males aged 40)**

Region		Predicted Number of Days to Find Job (median)			
		No Constraints	Long-term Unemployed	Socially Disadvantaged	Long-term Unemployed and Socially Disadvantaged
No ALMM	Urban	228	675	281	832
Vocational training	Urban	132	392	163	483
Work practice	Urban	122	362	151	446
No ALMM	Rural	244	724	301	893
Vocational training	Rural	142	421	175	519
Work practice	Rural	131	389	162	479

Source: NORK data, authors' estimates

### Section 3.6: Conclusion and Policy Recommendations

**190. This section concludes with specific policy recommendations for improving the efficiency and effectiveness of the social protection system**, building on the analysis in Section 3.2-3.5. Table 13 summarizes recommendations focused on improving spending efficiency for the three pillars of social protection: pensions, social assistance, and active labor market measures. The rest of the section reviews in more detail the recommendations for each pillar.

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<sup>151</sup> Employment data were not available in full for other programs.

<sup>152</sup> It is important to better understand the factors driving the differences between the beneficiaries and nonbeneficiaries of programs (for example, specific sectors, quality of counseling, proxies for informal employment, and so on) because the socioeconomic control variables available in the current data do not suffice to tease out (self-)selection biases in program participation, motivation, and the (persistent) seriousness of jobseeking efforts. Such factors are likely to have a strong influence on job search success.

**Table 13: Summary of main recommendations for improving spending efficiency in social protection**

<b>Issue</b>	<b>Policy Recommendation</b>
<b>Increasing affordability and improving social protection spending efficiency</b>	
Pensions systems reforms	<ul style="list-style-type: none"> <li>- Enforce the systematic phaseout of the government contribution to Pillar 2 (at least 1 percentage point every ten years)</li> <li>- Harmonize basic and labor pensions increases with the minimum pension increase proposed under the 2021-26 government program</li> </ul>
Social Assistance reforms	<ul style="list-style-type: none"> <li>- Pilot and implement the Vulnerability Assessment System reform</li> <li>- Freeze the benefit levels (in nominal terms) of the Childbirth grant</li> <li>- Introduce a simple, automated, affluence test for the Childcare Allowance for Children under 2, using a generous threshold (covering the bottom 2 or 3 quintiles)</li> <li>- Review and evaluate the many small programs which make up to 20 percent of the SA budget, and phase-out or consolidate the ineffective ones.</li> </ul>
Active Labor Market measures	<ul style="list-style-type: none"> <li>- Define priority target groups and a limited number of flagship programs, while discontinuing measures that are ineffective</li> <li>- Revisit the regional funding allocation formula to ensure that regional funding is differentiated based on needs</li> </ul>
<b>Improving administrative efficiency of social assistance and labor market measures</b>	
Social Assistance	<ul style="list-style-type: none"> <li>- Introduce an integrated information system to allow interoperability and integration of VAS with other government systems and databases</li> <li>- Introduce a social inspection unit to address error and fraud, and delegate home visits to community social workers, accompanied by capacity building and clear standards.</li> </ul>
Active Labor Market Measures	<ul style="list-style-type: none"> <li>- Enhance data architecture and use for decision making by digitalizing and standardizing data records for all ALMMs.</li> <li>- Use job counselors (NES staff) more efficiently, not just to prioritize vulnerable groups but also do more employer- outreach, expand the pool of vacancies and potential job offer suitable for their clients.</li> </ul>

## Reforming the pensions system

**191. Pensions reforms need to balance considerations of coverage and benefits adequacy, incentives of workers to participate and long-run fiscal sustainability.** The adequacy of pension benefits is lower than among peers, and, in the absence of systematic indexation of employment pensions to wage growth, the adequacy of benefits is expected to decline further. Furthermore, the current pension structure, with the sum of labor and basic pensions converging with the minimum pension, is not incentive-compatible for workers to participate in the funded pension pillar. This in turn raises concerns over fiscal sustainability as more of the burden on social pensions may fall on the budget in the future. Therefore, current policy commitments to increase the minimum pension will need to be accompanied by increases in the basic and labor pensions. Introducing indexation to wage growth and increasing minimum, basic, and labor pensions will entail fiscal costs. To ensure that these costs are sustainable in the long run, the government contribution to Pillar 2 needs to be systematically phased out.

**192. Therefore, the key recommendations for pensions reforms are to:**

- **Increase the basic and labor pensions to harmonize with the minimum pension increase proposed under the 2021-2026 government program.** Otherwise, formal sector employees may be discouraged from participating in the system, which may have undesirable long-term consequences for the state budget (due to the likely increase in the cost of social pensions) and for the sustainability of the pension system.
- **Consider introducing an automatic indexation system for employment pensions (basic and labor, Pillar 1) instead of ad-hoc increases in minimum, basic, and labor pension components.** It should be noted that if inflation indexation is used on medium-term pensions, the benefits will reduce sharply, which is not desirable and may be politically unsustainable. In the long run, it is much more realistic to assume that employment pensions will be directly or indirectly linked to wage growth. This will help maintain benefit ratios at the 2026 levels. The increase in the cost of pensions following indexation can be offset by the phase-out of the government contributions to Pillar 2 (Annex 3.1).
- **Enforce the systematic phaseout of the government contribution to Pillar 2.** The average cost of pensions in the short, medium, and long term (until 2080) is expected to remain sustainable at around 4 percent of GDP assuming that the government's average contribution per participant to Pillar 2 decreases by 1 percentage point every 10 years (from 5.5 percent out of a total 10 percent in 2022) and the ratio of pension contributors to total employment in the country is maintained at around 60 percent. This is the case even if the minimum, basic, and labor pensions are indexed to average nominal wage growth after 2026. Care must be taken not to reduce the total 10 percent contribution rate to Pillar 2 pensions as this would jeopardize the adequacy and sustainability of pensions in the medium to longer term.

## Social assistance benefits

**193. The chapter finds that Armenia's social assistance performance with respect to protecting the poorest 20 percent of the population is mixed:** coverage is above the average, incidence in the poorest quintile (targeting) is around the average, and adequacy of benefits lags peers. The SA

system comprises 5 large programs, accounting for 80 percent of expenditure, and several smaller noncontributory benefits targeting various life-cycle events, risks, or socioeconomic groups.

**194. The system is being reformed to improve efficiency and effectiveness**, with key reforms including reform of the targeting of the FBP, expansion of the CCA, and complementary reforms (such as the introduction of information systems).

**195. The FBP and CCA reforms will entail a fiscal cost, of approximately 0.15 percent of GDP by 2026, which can be offset by:** (i) minimizing error and fraud; and (ii) improving the cost-effectiveness of the system by rationalizing the cost of less effective measures. These recommendations are discussed in detail below.

***Enhance the design of the Family Benefit Program***

- **Avoid the introduction of excessively conservative eligibility rules that could further reduce coverage.** For example, if car ownership were considered a factor in tightening eligibility, about 25 percent of the income poor would be excluded from the program without significant gains in reducing inclusion errors. On the other hand, utility bills perform much better in reducing inclusion errors without significantly increasing exclusion errors.
- **The FBP should maintain and enhance those features that are incentive-compatible with formal employment.** Detaching the employment status of family members from the eligibility criteria (beyond family income or assets) and introducing earned income disregards for beneficiaries who get employed can further reduce the disincentive effects on employment. The ongoing FBP reform toward a hybrid means test to retain eligibility aims at reducing the incentives to avoid formal employment by imputing informal incomes.

***Strengthen implementation of the FBP***

- **Invest upfront in the modernization of information systems and prioritize their implementation.** The current information systems supporting the VAS and FBP have problems in terms of not only proper automation of corresponding business processes but also integration and data exchange. In this context, the verification of means (incomes, productive assets, and so on) and eligibility determination processes are resource-intensive, cumbersome, lengthy, often paper-based, prone to errors, and overall inefficient. The development of a new Unified Information System started in 2022, but so far has been affected by significant delays and is not in sync with the VAS reform timelines. Without having in place an integrated information system meeting the requirements of interoperability and integration with other systems, the VAS implementation will be hampered and the FBP's effectiveness and efficiency risk remaining limited.
- **Improve the efficiency of FBP implementation.** The current arrangement of home visits by the staff of deconcentrated Unified Social Service Centers is inefficient. In the medium term, these processes should be delegated to the local community level accompanied by capacity building and clear standards.

### ***Minimize the risks of error and fraud***

- **Put in place systems to address error and fraud.** To prevent the risk of noncompliance, error, and fraud not only by applicants and beneficiaries but also by community social workers, the government should consider introducing a social inspection unit to oversee compliance with regulations, standards, and Standard Operating Procedures (SOPs). To be efficient, the prevention of fraud and error should be supported by empirical risk models based on administrative and survey data.

### ***Improve the cost-effectiveness of the system***

- **Rationalize the cost of less effective measures.** This may include keeping the benefit levels of the Childbirth Grant constant for the medium term. After several increases in the size of the benefit for third children and higher, freezing the benefits in nominal terms for the coming years would yield a progressive reduction both in real terms and as a percentage of GDP. In addition, the government should consider phasing out or consolidating after a systematic evaluation some of the around 80 small programs that together account for 25 percent of the social protection expenditure on benefits and services. Given the absence of evidence on which of the smaller programs are more or less effective, a necessary first step in order to identify potential candidates to be phased out is to put in place a framework for evaluation.
- **Consider introducing a simplified affluence test based on automated checks in administrative databases and with a high eligibility threshold for the Childcare Allowance for children under 2.** Bulgaria and Romania introduced such an approach based on more generous thresholds for allowances targeted to families with children. This would involve close to zero administrative costs and would reduce the overall cost of the program by about 20 percent while still covering parents with children from the first two or three welfare quintiles for whom the financial assistance has the potential to have a larger impact on encouraging labor force participation and supporting child development.
- **Consider the costs and benefits of splitting the SOP into two separate programs or distinct components of the same program.** As the introduction of the International Classification of Functioning, Disability, and Health (ICF) for disability assessment advances, the government may consider the costs and benefits of splitting the SOP into two separate programs (or distinct components of the same program): one for the elderly not receiving employment pensions, and one for persons with disabilities as the two groups have different needs regarding the mix of income support and services and different eligibility determination procedures. In addition, it is likely that the administrative costs for assisting these two groups will be different.
- **Introduce a reference income (or anchor) for all (or most) social assistance benefits to ensure the consistency of social assistance policies and programs and to improve the effectiveness of benefits.** The Minimum Food Basket (MFB) would be the best candidate as it will also ensure automatic indexation of benefits. The benefit levels for various programs could be expressed as a percentage of the MFB. This would ensure that benefits remain adequate and effective but also transparent and predictable. Moreover, it will allow for setting the FBP eligibility threshold and benefit levels properly for the program to act as a last-resort safety net without significant variations in the number of beneficiaries or budget due to ad-hoc adjustments to other benefits (social pension, child allowance).

- **Strengthen the impact evaluation of programs to increase their effectiveness.** To better understand what reforms would increase the effectiveness and efficiency of SA programs, it is necessary to put in place strong impact evaluations. For example, taking advantage of the phased rollout of the CCA program, the government should consider introducing a rigorous impact evaluation so as to better understand what course corrections would strengthen the program.

#### Active labor market measures

**196. Armenia's Public Employment Service needs to modernize and improve the effectiveness of service delivery.** Based on existing evidence, it would be unrealistic to expect that the PES can serve a wide range of target groups with a broad portfolio of services while maintaining high-quality standards. The existing resources should rather be channeled toward selected priority areas based on labor market needs, the PES's existing capacity, and evidence about what works and what does not.

**197. Priority policy areas that could enable the PES to raise the quality of its service delivery, foster satisfaction among jobseekers and employers and enhance employment outcomes include:**

#### *Prioritization and consolidation*

- **Define priority target groups.** While the PES has a mandate to serve the entire population, selecting certain priority groups in line with labor market needs is necessary to align services accordingly.
- **Define a limited number of flagship programs.** With its limited resources, the PES may benefit from focusing these resources on a limited number of core ALMMs in line with target group needs and supported by steady public funding while discontinuing other measures that are ineffective or not aligned with the priority target groups.
- **Consider more differentiated regional funding and program selection.** To increase coverage among key target groups and channel funding to those regions with the biggest needs, the regional funding formula may need to be revisited. Moreover, regional employment offices could adjust the number of measures according to the particular needs in that region, thus reducing their administrative burden.
- More efficiently use job counselors (NES staff) not just to prioritize vulnerable groups but also offer more employer outreach and expand the pool of vacancies and potential job offers suitable for their clients.

#### *Targeting*

- **Newly registered unemployed, including first-time jobseekers (youth).** Successfully supporting jobseekers within the first few months after they become unemployed increases their chances of (re)integration in the labor market while preventing them from falling into long-term unemployment, which is harder and costlier to tackle.
- **The long-term unemployed.** Since they represent the majority of current PES clients and because they typically face multiple barriers to employment, the long-term unemployed should be considered a special target group. Additional sub-segmentation would be needed to identify the highest priority long-term unemployed.
- **Women.** Considering the prevalence of women among jobseekers and the unemployed as well as the share who are outside the labor force (i.e., inactive), it is important to dedicate

adequate resources to this group. The PES should consider prioritizing women at risk of dropping out of the labor market due to childbirth and childcare.

### ***Monitoring of results***

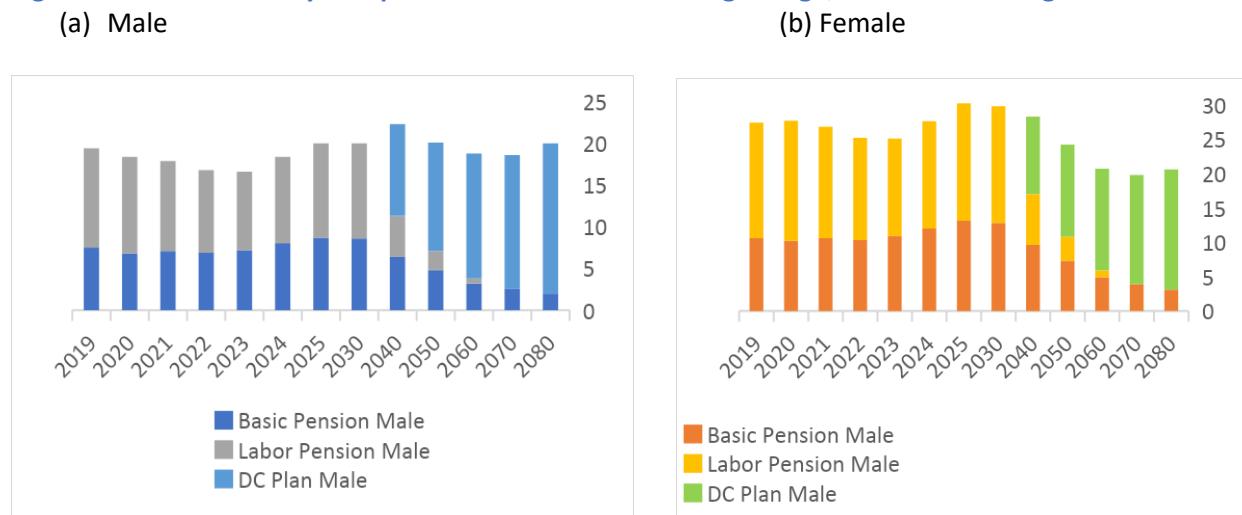
- **Update key performance indicators.** To successfully enhance the effectiveness of ALMMs, the PES must be able to monitor service quality and outcomes. This requires a set of key performance indicators (KPIs) at all levels (inputs, outputs, intermediate outcomes, final employment outcomes). For instance, service quality indicators such as jobseeker and employer satisfaction should be added to the current PES performance management system.
- **Enhance data architecture and use for decision making** by digitizing and standardizing data records for all ALMMs to ensure higher data quality as well as cross-comparability of programs. Potentially, administrative records can be supplemented with short, periodic, small-sample participant surveys and bi-annual representative surveys. These will help monitor participants' experience (including counseling, ALMM placement, and intermediation) and its aftermath (for example, employment status and job quality), adding another layer of monitoring and quality control beyond what administrative records can provide.
- **Systematically measure post-program employment.** This should include making job placement data comparable across programs, providing a consistent measure of post-program employment rates at a given point in time (for example, 6 and 12 months after program completion). Moreover, key data on registered jobseekers and ALMM participation should be collected in one database with links to the Tax Administration or Social Security Administration database. This will allow for more accurate measurement and comparison between different subgroups.

## Annex 3.1 Long-run pension simulations

In this annex, we show the impact on benefits and state budget costs if the basic, labor and minimum pensions are assumed to grow with inflation only from 2027 through 2070 rather than with wages. Not surprisingly, government expenditures will be lower, but that is only because benefits as a percent of the average wage become unrealistically small.

Figures A-3.1.1 and A-3.1.2 show that in 2080, if minimum and employment (basic plus labor) pensions benefits are indexed to inflation only, the overall male benefit ratio is expected to decline from 27.2% of the average nominal wage of contributors to 19.5%, a benefit reduction of almost 30%. The reduction would be much larger were it not for the benefit from the mandatory accumulation system, which maintains a constant replacement ratio throughout the projection period, once the system fully matures. Similarly, for females, the benefit ratio drops from 32.2% to 20.6%, an even larger drop of 36%. Women experience a bigger reduction than men, because their wages are lower, and therefore the basic and labor pensions provide a larger proportion of the benefit ratio than for men.

**Figure 1: Benefit Ratio by Components as Percent of Average Wage, Inflation Indexing**



After 2036, expected state budget expenditures on pensions reduce very rapidly from over 4% of GDP in 2030 to around 1% in 2080. In our opinion, it is unrealistic to believe that this result will be politically feasible or desirable. In the wage indexation scenario, pension expenditures in 2080 are estimated to be around 4 percent of GDP.

## Annex 3.2 Social protection programs coverage, adequacy and incidence by quintiles

**Table 1: Coverage, by quintiles and poverty status before transfers, 2021**

	Quintiles of per ae consumption, net of each SP transfer					Poverty Status		
	Total	Q1	Q2	Q3	Q4	Q5	Poor	Non-poor
<b>Direct and indirect beneficiaries</b>								
All social protection	60.4	97.5	79.9	55.9	39.4	29.4	83.5	38.5
All social insurance	45.6	87.8	54.4	36.6	27.4	21.6	68.3	27.4
Social insurance pensions	45.1	87.7	53.2	36.8	26.8	21.3	68.1	27.1
Pensions from abroad	0.6	1.6	0.5	0.4	0.2	0.2	1.5	0.2
All labor market programs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All social assistance	26.1	65.6	27.0	15.8	11.9	10.1	52.9	13.8
Family Benefit	13.1	40.7	11.5	6.7	4.2	2.3	32.3	5.4
Social pension	10.6	28.3	9.2	6.5	4.4	4.6	22.7	5.9
Childcare allowance	4.2	10.0	4.7	3.2	1.2	1.9	8.9	2.4
Childbirth grant (one time)	1.8	3.8	2.0	2.3	0.3	0.7	3.3	1.3
Scholarship	2.2	3.9	2.1	1.9	1.4	1.6	3.4	1.7

Notes:

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

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

**Table 2: Distribution of Beneficiaries, by quintiles and poverty status before transfers, 2021**

	Quintiles of per ae consumption, net of each SP transfer					Poverty Status		
	Total	Q1	Q2	Q3	Q4	Q5	Poor	Non-poor
<b>Direct and indirect beneficiaries</b>								
All social protection	100.0	32.2	26.5	18.5	13.0	9.7	67.3	32.7
All social insurance	100.0	38.5	23.9	16.0	12.1	9.5	66.6	33.4
Social insurance pensions	100.0	38.8	23.6	16.3	11.9	9.4	66.4	33.6
Pensions from abroad	100.0	56.4	17.2	12.6	7.1	6.8	70.5	29.5
All labor market programs	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
All social assistance	100.0	50.3	20.7	12.2	9.1	7.7	63.9	36.1
Family Benefit	100.0	62.2	17.5	10.3	6.4	3.5	70.6	29.4
Social pension	100.0	53.3	17.4	12.2	8.4	8.7	60.3	39.7
Childcare allowance	100.0	47.7	22.4	15.3	5.6	9.0	57.5	42.5
Childbirth grant (one time)	100.0	41.5	22.2	25.5	3.5	7.4	47.4	52.6
Scholarship	100.0	36.0	19.1	17.6	13.1	14.3	41.4	58.6

Notes:

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

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

**Table 3: Distribution of Benefits (Benefits Incidence), by quintiles and poverty status before transfers, 2021**

	Quintiles of per ae consumption, net of each SP transfer					Poverty Status		
	Total	Q1	Q2	Q3	Q4	Q5	Poor	Non-poor
All social protection	100.0	46.7	21.3	13.7	9.6	8.7	74.2	25.8
All social insurance	100.0	51.1	18.5	12.5	9.3	8.7	72.6	27.4
Social insurance pensions	100.0	50.3	18.7	12.8	9.4	8.8	72.1	27.9
Pensions from abroad	100.0	80.9	6.9	3.5	5.4	3.3	84.6	15.4
All labor market programs	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
All social assistance	100.0	56.4	17.9	10.5	7.6	7.5	67.4	32.6
Family Benefit	100.0	60.7	17.9	10.1	7.1	4.3	68.7	31.3
Social pension	100.0	52.4	15.3	12.2	8.5	11.7	57.9	42.1
Childcare allowance	100.0	43.8	22.1	15.9	6.1	12.0	53.3	46.7
Childbirth grant (one time)	100.0	41.3	16.3	25.2	4.7	12.4	45.7	54.3
Scholarship	100.0	26.8	34.4	16.5	10.6	11.7	31.4	68.6

Notes:

Benefits' incidence is the transfer amount received by the group as a percent of total transfers received by the population  
 Specifically, benefits' incidence is: (Sum of all transfers received by all individuals in the group)/(Sum of all transfers received by all individuals in the population).

**Table 4: Benefits adequacy, by quintiles and poverty status before transfers, 2021**

	Quintiles of per ae consumption, net of each SP transfer					Poverty Status		
	Total	Q1	Q2	Q3	Q4	Q5	Poor	Non-poor
All social protection	35.8	70.4	34.7	26.4	21.5	15.8	49.3	20.1
All social insurance	35.9	63.0	32.6	27.2	22.6	16.2	48.8	21.1
Social insurance pensions	35.2	61.0	32.4	26.9	22.7	16.0	47.7	21.0
Pensions from abroad	66.5	105.0	34.2	24.7	36.4	13.7	92.9	26.0
All labor market programs	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
All social assistance	20.1	32.2	17.8	14.3	11.9	8.9	28.4	12.5
Family Benefit	19.5	25.4	17.0	14.1	13.4	9.9	24.0	13.9
Social pension	17.5	25.1	15.9	14.6	12.6	10.1	23.7	12.9
Childcare allowance	13.0	16.6	13.3	11.3	10.3	8.7	15.9	10.8
Childbirth grant (one time)	8.0	11.1	6.1	6.6	7.6	7.1	10.4	6.6
Scholarship	2.9	3.5	5.9	2.5	1.8	1.3	3.4	2.7

Notes:

Adequacy is the mean transfer amount received by a group as a share of the total welfare of the beneficiaries in that group.

Specifically, adequacy is: (transfer amount received by a group)/(Total welfare aggregate of the beneficiaries in that group).

**Table 5: Undercoverage of poor and inclusion of non-poor (poverty before transfers), 2021**

	Total poor		
	Undercoverage of poor (2)	Inclusion of non-poor (3)	Share of funds (benefits) to non-poor (4)
<b>Direct and indirect beneficiaries</b>			
All social protection	16.5	32.7	25.8
All social insurance	31.7	33.4	27.4
Social insurance pensions	31.9	33.6	27.9
Pensions from abroad	98.5	29.5	15.4
All labor market programs	n.a.	n.a.	n.a.
All social assistance	47.1	36.1	32.6
Family Benefit	67.7	29.4	31.3
Social pension	77.3	39.7	42.1
Childcare allowance	91.1	42.5	46.7
Childbirth grant (one time)	96.7	52.6	54.3
Scholarship	96.6	58.6	68.6

Notes:

Under coverage of poor - the percent of poor individuals that do not receive transfer.

Inclusion of non-poor - the percent of individuals that receive transfer and are not poor.

**Table 6: Impact of Programs on Poverty and Inequality Measures - Simulating the absence of a Program, 2021**

All households	FGT0	FGT1	Gini
Post-transfer Indicators	0.262	0.047	0.232
<b>Indicators without listed transfer</b>			
All social protection	0.487	0.187	0.330
All social insurance	0.444	0.149	0.302
Social insurance pensions	0.440	0.146	0.301
Pensions from abroad	0.266	0.050	0.233
All labor market programs	n.a.	n.a.	n.a.
All social assistance	0.315	0.081	0.259
Family Benefit	0.286	0.063	0.245
Social pension	0.282	0.058	0.240
Childcare allowance	0.270	0.050	0.234
Childbirth grant (one time)	0.264	0.048	0.233
Scholarship	0.263	0.047	0.232

Notes:

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

FGT0 - Poverty headcount index

FGT1 - Poverty gap index

**Table 7: Benefit-Cost Ratio**

All social protection	0.66
All social insurance	0.63
Social insurance pensions	0.63
Pensions from abroad	0.41
All labor market programs	n.a.
All social assistance	0.77
Family Benefit	0.83
Social pension	0.68
Childcare allowance	0.79
Childbirth grant (one time)	0.71
Scholarship	0.61

Notes:

Benefit-cost ratio is the poverty gap reduction in a unit of local currency for each 1 unit spent on the social program.

**Table 8: Coverage, by quintiles and poverty status after transfers, 2021**

	Quintiles of per capita consumption, post-transfer					Poverty Status		
	Total	Q1	Q2	Q3	Q4	Q5	Poor	Non-poor
<b>Direct and indirect beneficiaries</b>								
All social protection	60.4	69.7	65.4	59.2	57.3	50.6	69.3	57.2
All social insurance	45.6	45.6	47.4	47.2	46.1	41.5	46.5	45.2
Social insurance pensions	45.1	45.5	47.2	46.8	45.7	40.5	46.4	44.7
Pensions from abroad	0.6	0.2	0.3	0.8	0.4	1.2	0.2	0.7
All labor market programs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All social assistance	26.1	45.2	30.7	19.9	19.6	14.9	43.4	19.9
Family Benefit	13.1	28.5	14.8	9.1	9.1	3.9	26.3	8.4
Social pension	10.6	18.2	11.5	7.5	9.0	6.9	16.8	8.4
Childcare allowance	4.2	6.3	6.0	3.8	2.3	2.6	6.4	3.4
Childbirth grant (one time)	1.8	2.7	2.6	1.7	1.4	0.7	2.9	1.5
Scholarship	2.2	3.0	2.4	2.6	1.4	1.6	3.4	1.8

Notes:

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

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

**Table 9: Distribution of Beneficiaries, by quintiles and poverty status after transfers, 2021**

	Quintiles of per ae consumption, post-transfer					Poverty Status		
	Total	Q1	Q2	Q3	Q4	Q5	Poor	Non-poor
<b>Direct and indirect beneficiaries</b>								
All social protection	100.0	23.1	21.6	19.6	18.9	16.8	30.1	69.9
All social insurance	100.0	20.0	20.7	20.8	20.2	18.2	26.8	73.2
Social insurance pensions	100.0	20.2	20.9	20.8	20.2	17.9	27.0	73.0
Pensions from abroad	100.0	5.7	9.6	27.4	15.2	42.1	7.7	92.3
All labor market programs	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
All social assistance	100.0	34.7	23.5	15.3	15.0	11.4	43.8	56.2
Family Benefit	100.0	43.6	22.5	14.0	13.9	6.0	52.7	47.3
Social pension	100.0	34.2	21.6	14.2	16.9	13.1	41.5	58.5
Childcare allowance	100.0	30.3	28.5	18.0	10.9	12.3	39.9	60.1
Childbirth grant (one time)	100.0	29.6	28.2	18.8	15.5	7.9	41.3	58.7
Scholarship	100.0	27.2	21.5	23.8	13.1	14.3	40.4	59.6

Notes:

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

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

**Table 10: Distribution of Benefits (Benefits Incidence), by quintiles and poverty status after transfers, 2021**

	Quintiles of per ae consumption, post-transfer					Poverty Status		
	Total	Q1	Q2	Q3	Q4	Q5	Poor	Non-poor
<b>All social protection</b>								
All social protection	100.0	17.0	18.9	20.7	20.5	22.9	22.9	77.1
All social insurance	100.0	13.3	17.8	21.7	21.9	25.2	18.5	81.5
Social insurance pensions	100.0	13.7	18.2	21.6	22.5	24.0	19.0	81.0
Pensions from abroad	100.0	3.1	6.4	25.1	5.0	60.4	5.9	94.1
All labor market programs	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
All social assistance	100.0	31.5	23.3	16.8	14.8	13.7	40.5	59.5
Family Benefit	100.0	40.3	22.7	14.5	14.6	8.0	49.8	50.2
Social pension	100.0	27.5	20.3	16.2	17.1	18.9	34.4	65.6
Childcare allowance	100.0	25.2	27.7	18.3	12.5	16.3	34.5	65.5
Childbirth grant (one time)	100.0	27.3	24.5	12.2	23.0	12.9	37.7	62.3
Scholarship	100.0	17.0	21.3	39.4	10.6	11.7	30.4	69.6

Notes:

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

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

**Table 11: Benefits adequacy, by quintiles and poverty status after transfers, 2021**

	Total	Quintiles of per ae consumption, post-transfer					Poverty Status	
		Q1	Q2	Q3	Q4	Q5	Poor	Non-poor
All social protection	35.8	48.9	41.4	39.7	34.0	26.5	35.8	48.9
All social insurance	35.9	45.4	42.0	40.8	35.4	27.6	35.9	45.4
Social insurance pensions	35.2	45.0	41.7	39.5	35.3	26.1	35.2	45.0
Pensions from abroad	66.5	100.5	75.8	94.1	31.0	63.0	66.5	100.5
All labor market programs	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
All social assistance	20.1	29.6	23.0	20.5	15.6	12.1	20.1	29.6
Family Benefit	19.5	27.3	20.2	16.8	14.7	12.0	19.5	27.3
Social pension	17.5	24.2	19.9	19.5	14.5	12.3	17.5	24.2
Childcare allowance	13.0	17.2	14.1	12.9	11.6	9.3	13.0	17.2
Childbirth grant (one time)	8.0	11.1	7.8	4.8	8.9	6.9	8.0	11.1
Scholarship	2.9	3.2	3.4	4.5	1.8	1.3	2.9	3.2

Adequacy is the mean transfer amount received by a group as a share of the total welfare of the beneficiaries in that group.

Specifically, adequacy is: (transfer amount received by a group)/(Total welfare aggregate of the beneficiaries in that group).

**Table 12: Undercoverage of poor and inclusion of non-poor (poverty after transfers), 2021**

	Total poor		
	Undercoverage of poor (2)	Inclusion of non-poor (3)	Share of funds (benefits) to non-poor (4)
<b>Direct and indirect beneficiaries</b>			
All social protection	30.7	69.9	77.1
All social insurance	53.5	73.2	81.5
Social insurance pensions	53.6	73.0	81.0
Pensions from abroad	99.8	92.3	94.1
All labor market programs	n.a.	n.a.	n.a.
All social assistance	56.6	56.2	59.5
Family Benefit	73.7	47.3	50.2
Social pension	83.2	58.5	65.6
Childcare allowance	93.6	60.1	65.5
Childbirth grant (one time)	97.1	58.7	62.3
Scholarship	96.6	59.6	69.6

Notes:

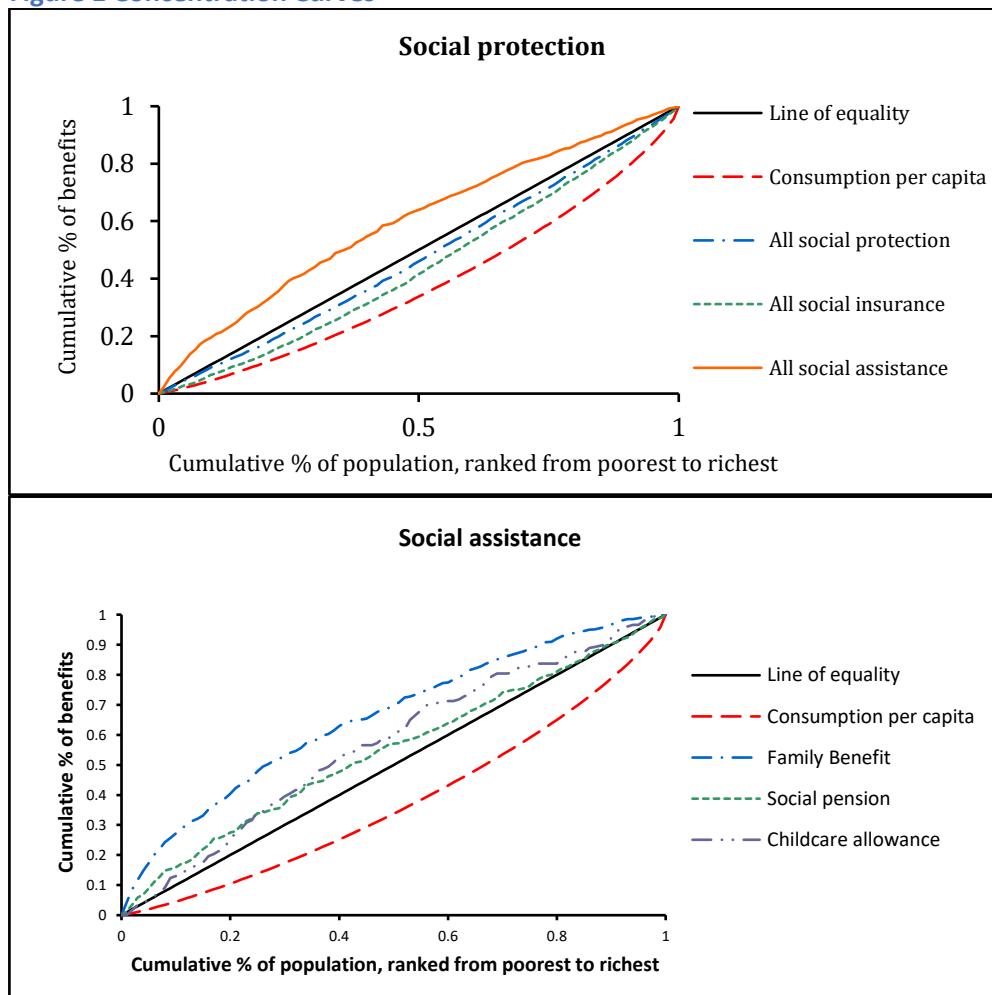
Under coverage of poor - the percent of poor individuals that do not receive transfer.

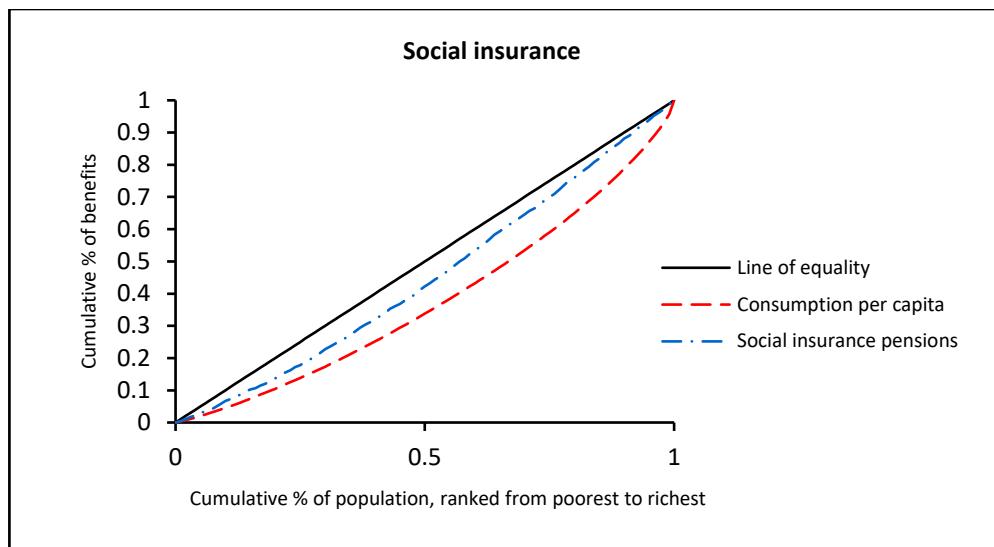
Inclusion of non-poor - the percent of individuals that receive transfer and are not poor.

**Table 13 Social Protection Impact on Inequality**

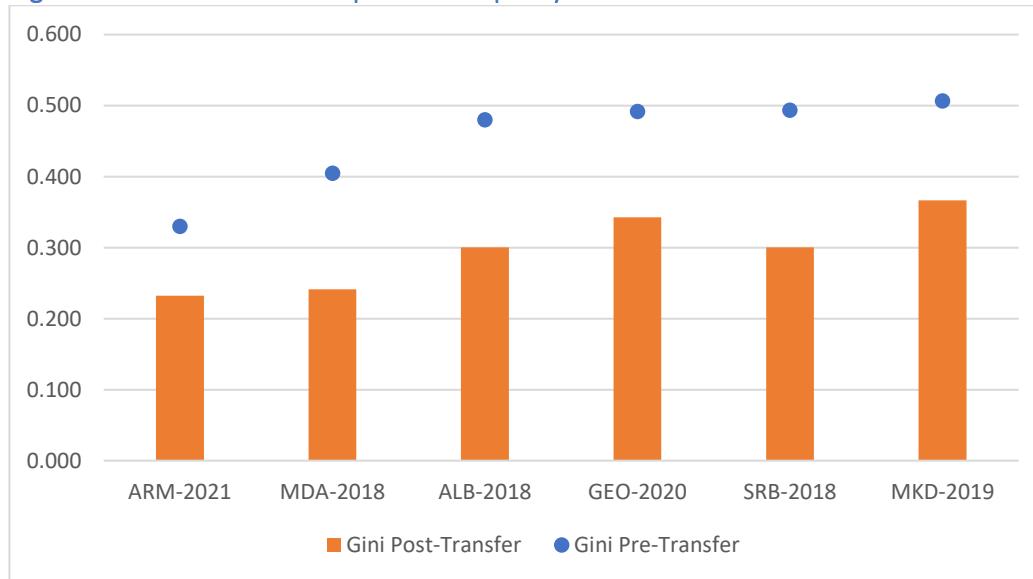
	SP impact on inequality (Gini)		
	Gini Pre-Transfer	Gini Post-Transfer	<i>Impact</i>
ARM-2021	0.330	0.232	-30%
MDA-2018	0.405	0.241	-40%
ALB-2018	0.480	0.300	-37%
GEO-2020	0.492	0.343	-30%
SRB-2018	0.493	0.300	-39%
MKD-2019	0.507	0.366	-28%

**Figure 1 Concentration Curves**





**Figure 2. Social Protection impact on Inequality**



### Annex 3.3: Regression analysis of the impact of the FBP on labor supply

**Table 1: Marginal effects of probit regression on the impact of the FBP on labor supply**

VARIABLES	(1) Inactivity	(2) Employment	(3) Formal employment	(4) Informal employment	(5) Inactivity	(6) Employment	(7) Formal employment	(8) Informal employment
Beneficiary	0.022 (0.016)	-0.073*** (0.017)	-0.335*** (0.028)	-0.127*** (0.021)	0.025*** (0.016)	-0.075*** (0.018)	-0.220*** (0.033)	0.052** (0.025)
Constant	0.122*** (0.004)	0.812*** (0.005)	0.413*** (0.006)	0.330*** (0.006)	0.122*** (0.004)	0.812*** (0.005)	0.413*** (0.006)	0.330*** (0.006)
Observations	7,198	7,198	7,198	7,198	7,198	7,198	7,198	7,198
Age FE	NO	NO	NO	NO	YES	YES	YES	YES
Gender FE	NO	NO	NO	NO	YES	YES	YES	YES
Marital Status FE	NO	NO	NO	NO	YES	YES	YES	YES
Education FE	NO	NO	NO	NO	YES	YES	YES	YES
Income level FE	NO	NO	NO	NO	YES	YES	YES	YES
# members disability	NO	NO	NO	NO	YES	YES	YES	YES
Marz FE	NO	NO	NO	NO	YES	YES	YES	YES
Year covered	2019	2019	2019	2019	2019	2019	2019	2019

Note: Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. The probit regressions compare the labor market outcomes of beneficiaries and non-beneficiaries of the FBP with and without controlling for different individual and regional characteristics (age, gender, marital status, education levels, number of members with disabilities, and Marz of residence).

### Annex 3.4: Impact of the CCA program on female labor market outcomes

In 2021, the Childcare Allowance Program (CCA) for families with children under 2 was expanded from only families in formal employment to all families with newborns in rural areas. While only 7% of women with children under 2 in rural areas received this monthly benefit in 2019 (mostly women in the upper two quintiles of income), the prevalence increased to 42% in 2021 (with poorer women more likely to be covered). This extension was aimed to cover more vulnerable women in rural areas that were either not employed or working informally, and potentially incentivize them to engage in the labor market.

To approximate the impact of the program on the labor outcome of women with young children, we use data from the Integrated Living Condition Survey of Armenia for the years 2019 and 2021. Restricting the sample for rural areas where the policy change took place, we follow a difference-in-differences methodology in which the treatment group are women with children under 2 and the control group were women with children between 2 and 4 years old. As these two groups can be different and thus not directly comparable, we observe their labor market outcomes of those two groups in 2019 (pre-policy change) and in 2021 (after the universal coverage in rural areas). This methodology allows to control for differences in the two groups that are constant over time, although it assumes parallel trends.

Results of the analysis show that the program did not have a statistically significant impact on either employment or inactivity rates of women (table A3.4-1), even after controlling for several indicators such as their age, education level, Marz, number of previous children, and consumption levels. Results are also not significant when restricting the sample to women in the bottom 40% of welfare (consumption), although the small sample size limits the analysis. If anything, the program seems to be slightly associated with lower economic activity of women in the poorer quintiles and not more. However, a more rigorous impact evaluation with better data is needed to provide more robust results.

**Table 1: Diff-in-Diff regression on the impact of CCA on employment and inactivity of mothers with children < 4 in rural areas.**

VARIABLES	(1) Total Employment	(2) Total Employment	(3) Total Inactivity	(4) Total Inactivity	(5) Employment bottom 40%	(6) Employment bottom 40%	(7) Inactivity bottom 40%	(8) Inactivity bottom 40%
Children 0-2 (vs children 2-4)	-0.195*** (0.057)	-0.175*** (0.052)	0.216*** (0.059)	0.190** (0.054)	-0.221*** (0.074)	-0.158** (0.067)	0.263*** (0.077)	0.194*** (0.070)
Year 2021 (vs year 2020)	0.082 (0.057)	0.052 (0.059)	-0.117* (0.061)	-0.087 (0.060)	0.170** (0.073)	0.153** (0.078)	-0.236*** (0.081)	-0.198** (0.078)
<b>Children 0-2*2021</b>	<b>-0.025</b> (0.081)	<b>0.022</b> (0.076)	<b>0.081</b> (0.085)	<b>0.033</b> (0.079)	<b>-0.076</b> (0.104)	<b>-0.079</b> (0.097)	<b>0.161</b> (0.111)	<b>0.138</b> (0.100)
Observations	665	665	658	658	405	405	404	404
R-squared	0.02	0.22	0.02	0.20	0.02	0.22	0.02	0.22
Controls	NO	YES	NO	YES	NO	YES	NO	YES

Note: Standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Diff-in-diff regression compares labor market outcomes of mothers with children smaller than 2 years old with those with children 2-4 in rural areas in 2019 (when only formally employed women with children under 2 could access the benefit) and 2021 (after the expansion to all women with children under 2). Controls include age, education level, marz, number of previous children and quintile of welfare (based on consumption levels).

### Annex 3.5: Regression Analysis on the Impact of Childbirth Grant on Fertility

The methodology used to assess the impact of the child allowance program on fertility in Armenia is based on a difference in difference approach, taking advantage of the policy change in 2015 by which the benefit for having a third child or more increased from AMD 430,000 to AMD 1,000,000 while the incentive remained constant at AMD 50,000 for having the first or second child. Using the ILCS survey for the years 2012 to 2019, the regression compares changes in the probability of having a child between women that already had two children (treatment group) and women that had only one (control group) during the periods 2012-15 (pre-policy change) and 2016-19 (post policy change).<sup>153</sup> It also controls for other relevant variables such as the age, marital status and education level of the women, the region and degree of urbanization of the location where women live and time fixed effects to capture national trends in fertility.

Results show that the increase in child allowance for families with three children increased the probability of giving birth of women with two children by 2.3 percentage points (pp) compared to women with only one child who did not directly benefit from the policy change (Table A3.5-1). Results are similar across urban and rural areas. However, there are statistical differences across income groups: while women in the top 60% of consumption have a 3pp increase in the probability of giving birth, the increase is cut to 1.3pp (not statistically significant) for women in the bottom 40%. The higher impact on better-off women coincides with their lower initial fertility, suggesting that incentives promote a natality convergence across groups.

**Table 1: Difference-in-Difference regression on the impact of the one-time child allowance on fertility**

VARIABLES	(1) Total	(2) Rural	(3) Urban	(4) Bottom 40%	(5) Top 60%	(6) Urban Bottom 40%	(7) Urban Top 60%	(8) Rural Bottom 40%	(9) Rural Top 60%
Post2015*2 kids	0.023*** (0.006)	0.021** (0.010)	0.025** (0.010)	0.012 (0.015)	0.026*** (0.007)	0.013 (0.018)	0.028*** (0.009)	0.013 (0.025)	0.030*** (0.011)
Constant	0.033*** (0.002)	0.038*** (0.004)	0.029*** (0.003)	0.050*** (0.005)	0.023*** (0.003)	0.038*** (0.006)	0.024*** (0.003)	0.071*** (0.010)	0.022*** (0.004)
Observations	16,052	5,616	10,436	4,765	10,888	2,944	6,939	1,799	3,293
Age FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Marital Status FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Education FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Marz FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Years covered	2012-19	2012-19	2012-19	2012-19	2012-19	2012-19	2012-19	2012-19	2012-19

Note: Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. The regression compares the probability of having a newborn in a given year for mothers with already two children vs those with one, before and after the 2015 policy change that increased the allowance to only families having their third child.

<sup>153</sup> We placed the cutoff in 2016 to account for the pregnancy period.

# **Chapter 4: Improving the Efficiency and Equity of Public Health Spending**

## Chapter 4: Improving the efficiency and equity of public health spending

- 198. Since independence in 1991, Armenia has undertaken significant health reforms and achieved gains.** Armenia has undertaken significant reforms in health sector governance, service delivery and financing, and, compared with many countries in the former Soviet Union, the country has been successful in rationalizing resource use by reducing its hospital capacity and non-medical staffing. These improvements are also reflected in significant improvements in population health outcomes.
- 199. However, following these successes, sector governance, financing, and delivery arrangements have not kept pace with evolving health needs.** Armenia faces a growing burden from non-communicable diseases (NCDs) and has an aging population. The health system is not currently geared to respond to these challenges, with concerns regarding financing, over-reliance on out-of-pocket payments to finance health spending, stagnant and inefficient public health spending and service delivery, including quality of care and regulation of providers, and challenges with governance of the health sector.
- 200. This chapter focuses on health sector governance and financing, and particularly on public health spending.<sup>154</sup>** The chapter is organized as follows: Section 4.1 provides an overview of the service delivery, governance, and financing of the health system. Section 4.2 focuses on population health outcomes. Section 4.3 examines the composition of total health financing and provides an overview of the composition of public health expenditures. Section 4.4 assesses the efficiency of public health spending and discusses some of the drivers of inefficiency, including fragmentation of public health expenditure and non-strategic purchasing, high pharmaceutical prices, and hospital-centric service delivery with its corresponding low priority for primary health care (PHC).<sup>155</sup> Section 4.5 takes a forward look at the ongoing reform efforts to move towards Universal Health Coverage (UHC).<sup>156</sup> Section 4.6 concludes with recommendations for improving

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<sup>154</sup> Service delivery challenges are also critical, but these are covered in other complementary WB reports and thus not the focus of this chapter. These reports include: (i) Chukwuma, Adanna, Deborah Ugochi, Bruno Meessen, Hratchia Zaven Hratchia Lylozian, Emma Ghazaryan, and Estella Tian-Ran Gong. 2020. "Strategic Purchasing for Better Health in Armenia." Washington, DC: World Bank; (ii) Chukwuma, A., S. Gurazada, M. Jain, S. Tsaturyan, and M. Khcheyan. 2020. "FinHealth Armenia: Reforming Public Financial Management to Improve Health Service Delivery." <https://doi.org/10.1596/34747>; (iii) World Bank. 2023 Forthcoming. "Building Effective Primary Healthcare in Armenia."

<sup>155</sup> Purchasing refers to the allocation of pooled funds to healthcare providers for the delivery of health services on behalf of certain groups or the entire population. Purchasing is considered strategic when these allocations are linked, at least in part, to information on provider performance and the health needs of the population they serve with the aim of realizing efficiency gains, increasing equitable distribution of resources, and managing expenditure growth. Strategic purchasing is concerned with defining: (i) *What to buy?* -- Which services will respond to the needs of the target population, how will they be defined?; (ii) *From whom to buy?* – Which providers, public and/or private, will be able to deliver effectively those services?; and (iii) *How to buy?* – How will providers be paid, at what rates, what are contracting terms, and how will compliance be monitored?.  
Source: <https://www.who.int/activities/promoting-strategic-purchasing>

<sup>156</sup> This chapter discusses the move towards Universal Health Coverage, which, as per the WHO definition, is defined as the following: All people have access to the full range of quality health services they need, when and

the efficiency and equity of public health expenditure and supporting ongoing reform efforts to move towards UHC.

**201. This chapter looks to inform governance- and financing-related aspects of the reforms Armenia is planning to undertake as part of a move to UHC.** To meet evolving population health needs and to improve access to healthcare, the 2021-2026 government program commits the government to undertake the most significant reform effort in three decades to reorient service delivery, financing, and governance towards achieving UHC. The reform roadmap is outlined in the Concept Note on Introduction of Universal Health Insurance (UHI) and the 2023-2026 Health System Development Strategy of the Republic of Armenia adopted by Government Decision and is briefly discussed in Section 4.5.<sup>157</sup><sup>158</sup> Policy recommendations for improving the efficiency and equity of public health spending (see Section 4.6) look to inform some of the governance- and financing-related aspects of the UHC reform roadmap. However, this chapter does not provide a comprehensive review of the UHC reform. Notably, the chapter does not include a costing of the reform and does not discuss the reforms needed to improve service delivery.

#### Section 4.1: Overview of service delivery arrangements, governance, and financing of the health system

**202. Health services in Armenia are provided largely by public facilities, excepting in Yerevan, which has a concentration of health services.** A large share of inpatient (69 percent) and outpatient (76 percent) facilities are public, though dental facilities and some specialist hospitals in Yerevan are privately managed. Healthcare services are concentrated in Yerevan, disproportionately to its share of the population, with 68.3 percent of doctors, 51.8 percent of hospital beds, 32.1 percent of inpatient facilities located in the city. Pharmacy density is also high in Yerevan – at 7.3 per 10,000 population, which is more than three times the density in OECD countries (ArmStat 2018) – but less so in rural areas. For 24 percent of rural households, the distance to the nearest pharmacy is over 10 kilometers. Primary health care (PHC) services are organized through rural ambulatories, rural health centers, and urban polyclinics. Along with PHC services, polyclinics also deliver some narrow basic specialized outpatient services as well as diagnostic lab tests.

**203. Armenia has undertaken significant service delivery reforms since independence, which have helped reduce the hospital-centric nature of the system.** Economic shocks following the dissolution of the Soviet Union in 1991 spurred reductions in excess hospital infrastructure over a period of three decades.<sup>159</sup> Between 1990 and 2020, the number of hospital beds fell by 58 percent, and the number of hospitals by 32 percent. Almost all public hospitals in rural areas were closed, and secondary-level facilities across regions were merged with outpatient polyclinics and

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where they need them, without financial hardship. It covers the full continuum of essential health services from health promotion to prevention, treatment, rehabilitation, and palliative care across the life course. In Armenian policy documents, this policy is referred to as Universal Health Insurance (UHI). The two terms are used interchangeably in this chapter.

<sup>157</sup> Government decision No. N-133-L dated February 2, 2023.

<sup>158</sup> Government decision No. N-174-L dated February 9, 2023.

<sup>159</sup> WHO. 2020a. "Health Systems in Action: Armenia." Geneva: World Health Organization. Retrieved from <https://apps.who.int/iris/rest/bitstreams/1463761/retrieve>

maternity hospitals, scaling down on equipment, beds, and staff. When looking at the number of hospital beds per capita and the average length of hospital stay, Armenia seems to be at par with comparator countries, but the metrics need to be interpreted with care (Box 8). In addition, the shift from line-item hospital budgets to output-based (that is, case-based) funding reduced the incentive to expand inpatient care.<sup>160</sup> In tandem with hospital-level reforms, Armenia was also one of the first movers among post-Soviet states to strengthen the role of primary care by introducing family medicine as a specialty for training physicians and rehabilitating rural ambulatory facilities.

**Box 8. Hospital Care Metrics**

**The number of hospital beds per capita is another commonly used metric for comparing healthcare systems across different countries.** This ratio reflects the capacity of a country's healthcare system to provide inpatient care to its population. While this metric can be helpful in identifying disparities and needs in healthcare delivery, it is important to consider other factors that can influence the number of hospital beds needed, such as the age distribution of the population, prevalence of chronic diseases, and availability of other healthcare services. For example, countries with older populations may require more hospital beds per capita than countries with younger populations. Furthermore, the number of hospital beds alone does not necessarily reflect the overall quality or effectiveness of a healthcare system. Therefore, while the number of hospital beds per capita is a relevant metric, it should be used in conjunction with other indicators to gain a more comprehensive understanding of a country's healthcare system. According to the WHO, the average number of hospital beds per 1,000 population in high-income countries is approximately 5-6 beds, while in low- and middle-income countries, it is approximately 1-2 beds. In 2021, Armenia had 4.3 beds per 1,000 people, lower than the high-income country average but comparable to peers (Table B7-1).

**Table B7-1. Comparative overview of beds per population, latest available data, Armenia and selected peer countries**

	Armenia	Albania	Georgia	Moldova	Tunisia
Beds per 1,000 people	4.3 (2021)	2.9 (2013)	5.6 (2021)	5.7 (2014)	2.2 (2017)

Source: WBG Healthcare database and Geostat for Georgia

**Another important metric is average length of stay (LoS) in acute care hospitals. In 2021, Armenia had a LoS of 7.5 days, which is below the OECD average of 8.0 days.** LoS is an important metric in healthcare as it can be an indicator of the quality of care provided to patients. Shorter hospital stays can be more cost-effective and reduce the risk of hospital-acquired infections, but they must also ensure that patients have received adequate treatment and are stable enough to be discharged safely. A shorter stay that leads to early discharge without appropriate follow-up care can lead to readmissions and poorer health outcomes. On the other hand, longer hospital stays can be more expensive and may expose patients to further risks associated with hospitalization. Therefore, it is essential to strike a balance between efficient and effective healthcare delivery while ensuring that patients receive the appropriate level of care necessary for their specific medical condition. LoS should be assessed on a case-by-case basis, considering individual patient needs and available resources to achieve the best outcomes for patients. Over the past twenty years, acute hospital stays have significantly decreased across all countries. This is also the case for Armenia, where it has come down from 14.6 in 1996 to 7.4 in 2020 and compares favorably with comparators (Table B7-2).

<sup>160</sup> In contrast to the regions, hospital optimization in Yerevan lagged significantly, dominated by private sector expansion. Hence currently, 65 percent of hospital beds in Armenia are in Yerevan, where just 37 percent of the population lives. In addition, 74 percent of physicians practice in Yerevan, while there are unfilled vacancies for physicians in regional facilities.

**Table B7-2. Average length of stay, all hospitals, 2021 (or latest available), selected peer countries**

	Armenia	Albania	Georgia	Moldova	Tunisia
LoS, days	7.4 (2020)	5.5 (2013)	6.7 (2021)	8 (2021)	n/a

Source: WHO, European Health Information Gateway, accessed May 2023

**204. Service delivery challenges impede the delivery of high-quality care and in turn impact health outcomes.**<sup>161</sup> There are several illustrations of the gaps in service delivery. For example, less than 44 percent of providers accurately diagnose common conditions, including diarrhea with severe dehydration and hypertension with an abnormal lipid profile.<sup>162</sup> Similarly, following a diagnosis, less than 35 percent initiate appropriate treatment.<sup>163</sup> As a result, NCDs are often not well controlled. For instance, less than 10 percent of people with hypertension in Armenia achieve normal blood pressure. Service delivery gaps include insufficient provider training and motivation, inadequate supplies and equipment, undersupply of skilled health workers in rural areas, a provider payment mix that does not reward improved services, and gaps in proactive supervision of health facilities.<sup>164</sup> However, these are not covered in depth in this report and are covered in other complementary WB reports on the health sector.<sup>165</sup>

**205. In terms of governance, the Ministry of Health is responsible for oversight and regulation of the health sector, and the State Health Agency (SHA) was created in 1997 as the purchaser of all publicly-funded medical services.** By mandate, the SHA was responsible for contracting with all local health care providers and paying them based on the volume of work performed. The SHA, originally subordinate to the Government of Armenia (GOA) and independent from the MoH, was intended to be a third-party purchaser in order to separate funding from purchasing and increase accountability in spending.

**206. However, due to concerns over the loss of financial leverage by the MoH over providers, the decision rights of the SHA have been reduced.** In 2002, the SHA was assimilated into the MoH. The SHA contracted providers and processed claims from 2002 to 2011, after which the MOH began to contract with providers directly.<sup>166</sup> Multiple private insurers are responsible for processing claims for government workers eligible for the Social Package under the Basic Benefits Package (the social package and the BBP are described below). With decentralization of administrative functions, regional authorities can make decisions on facility spending for services outside the BBP.

<sup>161</sup> As noted earlier, these challenges are covered in other WB reports and not the focus of this chapter.

<sup>162</sup> World Bank. (2023, forthcoming). “Building Effective Primary Healthcare in Armenia.”

<sup>163</sup> Zhou, Bin, et al. (2021). “Worldwide trends in hypertension prevalence and progress in treatment and control from 1990 to 2019: A pooled analysis of 1201 population-representative studies with 104 million participants.” *The Lancet*, 398(10304), 957-980.

<sup>164</sup> Lavado, R., Hayrapetyan, S., and Kharazyan, S. (2018). “Expansion of the Benefits Package: The Experience of Armenia.” Universal Health Care Coverage Series No. 27. Washington, DC: World Bank. (2023, forthcoming). “Building Effective Primary Healthcare in Armenia.”

<sup>165</sup> These reports are highlighted in footnote 1.

<sup>166</sup> Chukwuma, Adanna, Deborah Ugochi, Bruno Meessen, Hratchia Zaven Hratchia Lylozian, Emma Ghazaryan, and Estella Tian-Ran Gong. 2020b. “Strategic Purchasing for Better Health in Armenia.” Washington, DC: World Bank.

**207. Health financing is dominated by private out-of-pocket spending (see Sections 4.3 and 4.4 for detailed discussion of health financing).** On an aggregate level, total health spending has risen significantly over the past two decades. Private out-of-pocket (OOP) spending is the predominant source of financing for health, accounting for 84.8 percent of total health expenditure in 2019, which is the highest among selected peers. The public and external share of total spending on health accounted for 13 percent of total health expenditure in 2019. Although multiple voluntary health insurance schemes exist, these account for around 2 percent of total spending on health.

**208. The general government revenue-financed basic benefits package (BBP) *de jure* provides extensive coverage of essential health services, but is a *de facto* combination of multiple, fragmented sub-packages with limited coverage and depth.** The whole population is entitled to a minimum package that includes primary care (excluding most medicines and diagnostics), emergency care, maternal and child health programs, and the treatment of cancer, HIV/AIDS, tuberculosis, and other infectious diseases. A separate package covers additional care, including some hospital services for socially vulnerable and special groups such as people with disabilities, children under 18 years, pregnant women, those eligible for the Family Benefits Program, and the military. Across sub-packages, only 38 percent of the population is entitled to state-funded hospital care. In addition, copayments for some outpatient services are fully or partially waived for socially vulnerable and special groups. For example, pensioners are entitled to a 30 percent discount, and children below 7 years access medicines at no cost. However, even in the more generous packages, some services are underfunded, contributing to the high levels of OOP. Table 14 shows the coverage of Armenia's population by different health schemes.

**209. Government employees under the social special package enjoy the most generous coverage, with broader hospital service and medicine access.** The social package program covers civil servants, public school teachers and some other categories of employees of public institutions, in total about 115,000.<sup>167</sup> These claims are processed by Third-Party Administrators (TPA) through a mechanism adopted at the end of 2017. According to the new mechanism, provision of medical services for beneficiaries is organized through six private insurance companies, which are licensed by the Central Bank to provide health insurance services in the Republic of Armenia.

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<sup>167</sup> Data for 2022. See details in Annex 4.2.

**Table 14: Basic Benefit Package (BBP) Coverage**

Type of Coverage	Description	Coverage (million)	Coverage (% of total population )
Non-contributory National Health Service (NHS) provision for enrolled participants (does not include NHS scheme coverage for non-insured populations)	Basic Benefit Package (BBP) primary health care services	3.01	100%-- coverage but only 98% is registered
Non-contributory health insurance schemes	BBP (inpatient coverage) for the poor and vulnerable groups; "Social Package" for civil servants and military personnel.	1.15	~38%
Private health insurance schemes	Voluntary private health insurance for corporations and individuals (including beneficiaries of "Social Package")	0.2*	6.7 %

\*- Includes 115 thousand social package beneficiaries.

Source: Lavado, R., Hayrapetyan, S., and Kharazyan, S. 2018. "Expansion of the Benefits Package: The Experience of Armenia." Universal Health Care Coverage Series No. 27. Washington, DC: World Bank Group. WB staff calculations.

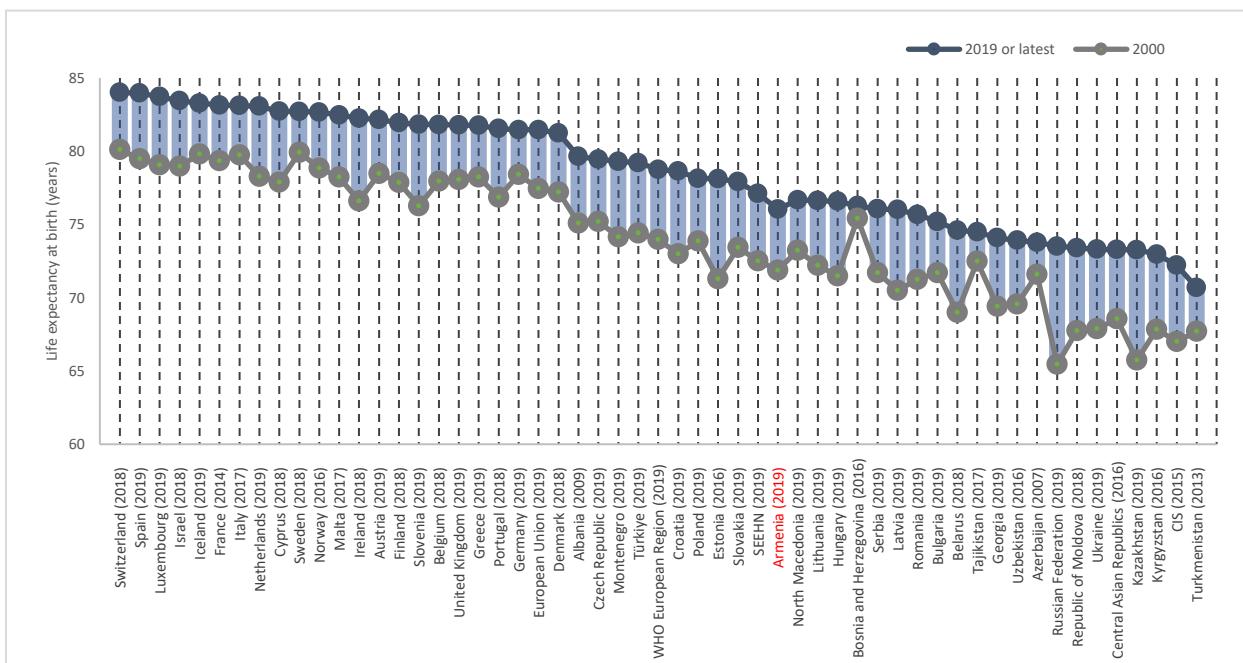
#### Section 4.2: Trends in key health outcomes in Armenia

**210. Armenia has made significant progress in improving population health outcomes.** Between 2000 and 2019, life expectancy increased from 72 years to 76 years, the highest among Commonwealth of Independent States (CIS) countries (Figure 70).<sup>168</sup> Female life expectancy exceeds male life expectancy by 6.6 years, slightly higher than the average in UMICs (6 years). These improvements in health outcomes are attributable to a decline in preventable maternal and child death. This in turn was helped by universal access to maternal and child health programs (funded through the state) and broader improvements in household welfare given economic growth in the intervening period. However, with the COVID-19 pandemic and the military conflict with Azerbaijan, life expectancy dropped by 3.2 years in 2020, particularly among men (3.3 years) compared to women (2.8 years).<sup>169</sup>

<sup>168</sup> WHO. (2022). "Health System in Action: Armenia." Geneva: World Health Organization.

<sup>169</sup> World Development Indicators

**Figure 70. Life expectancy at birth in Europe. In years**



Source: WHO. 2022. "Health Systems in Action: Armenia." Geneva.

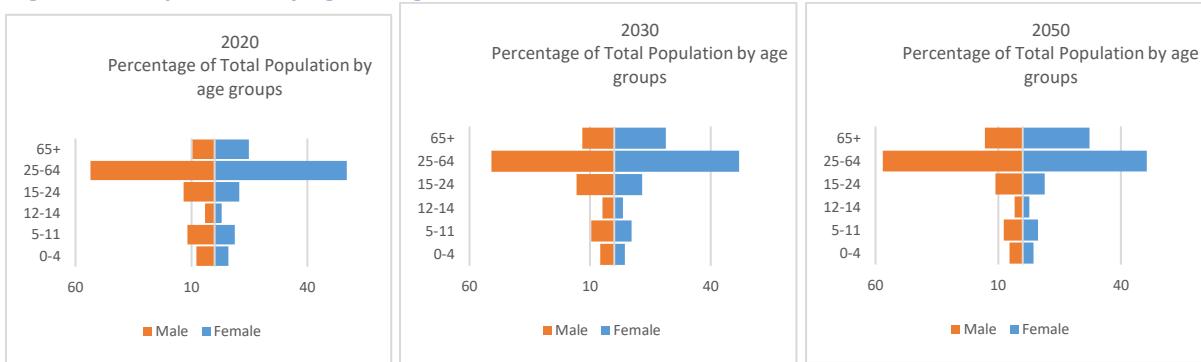
<https://apps.who.int/iris/rest/bitstreams/1463761/retrieve>. Author's calculations.

**211. Armenians are living longer but not necessarily productively as the burden of NCDs is high, driven by behavioral risks, unhealthy aging, and variable access to quality care.** NCDs account for an estimated 93 percent of all deaths, higher than the global average of 71 percent and resulting in estimated annual economic losses exceeding AMD 300 billion.<sup>170</sup> The NCD burden reflects in part unhealthy diets and a high prevalence of exposure to tobacco products. For example, smoking prevalence among males (49.4 percent) in 2020 was significantly above the average for the WHO's European region (32 percent) and CIS countries (37.6 percent). Furthermore, Armenia is faced with low fertility rates and high rates of out-migration, aggravating the trend of an already aging population, which is linked to a higher risk of multiple, co-existing NCDs, including cancers and cardiovascular disease. Currently, 11 percent of the Armenian population is 65 or older, and this share is projected to increase to 24 percent by 2050 (Figure 71). NCDs are also impacted by gaps in access to good-quality health care. Between 2000 and 2019, the NCD service coverage index fell from 50 (out of 100) to 45 while the index for maternal and child health care rose from 48 to 76.<sup>171</sup>

<sup>170</sup> WHO. 2018. "Noncommunicable diseases country profiles 2018: Armenia." Geneva: World Health Organization.

<sup>171</sup> WHO. 2022. Global Health Observatory Database (accessed January 14, 2023). Geneva: World Health Organization. <https://apps.who.int/gho/data/?theme=main>

**Figure 71. Population by age and gender, 2020–2050. Percent**



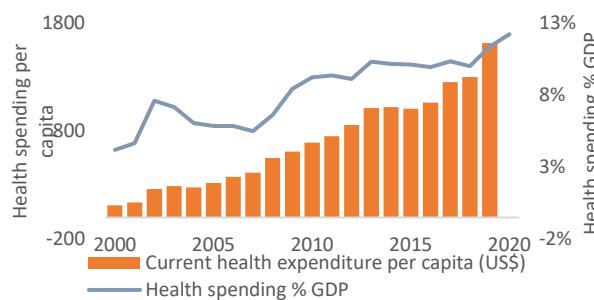
Source: Authors' analysis of UN Population Database (2022)

### Section 4.3: Health spending overview

#### 212. Total health expenditure (public and private) in Armenia has risen over the past two decades.

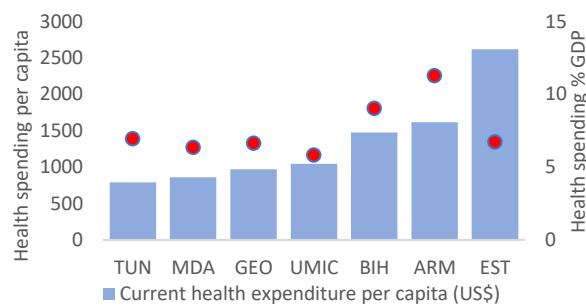
Total health expenditure per capita (adjusted for purchasing power – PPP) rose from USD 139 in 2001 to USD 1,616 in 2019. As a share of GDP, health expenditure has risen from 4.7 percent of GDP in 2001 to 11.3 percent in 2019 (Figure 72). Compared with peer countries, per capita spending in 2019 was higher than the average among Upper Middle-Income Countries (UMICs) (USD 1,046) and as a percentage of GDP is the highest among selected peers (Figure 73).

**Figure 72. Armenia current health expenditure as a share of GDP and per capita. PPP, US\$**



Source: World Development Indicators

**Figure 73. Current health expenditure as a share of GDP and per capita. PPP, US\$ (2019)**

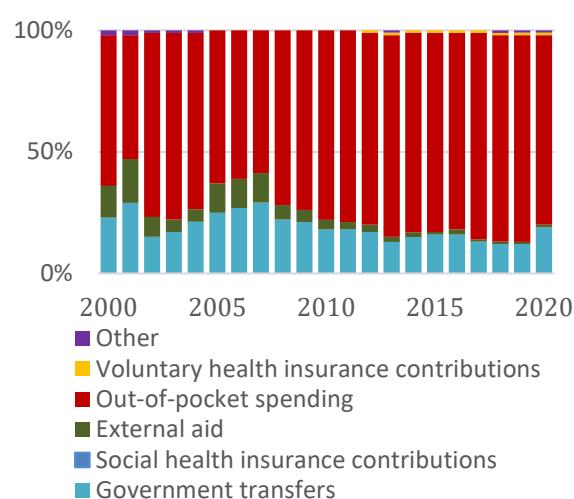


Source: World Development Indicators

#### 213. Private spending accounts for the largest share of health expenditures.

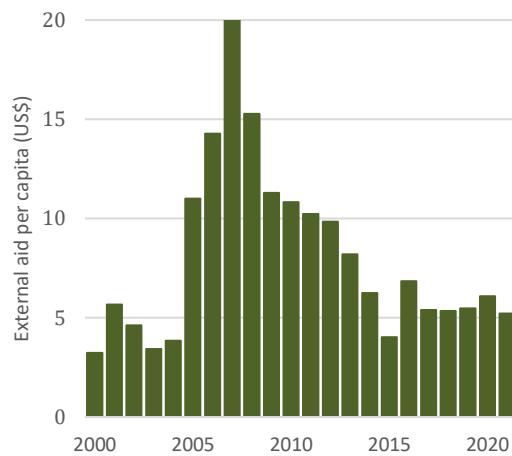
Between 2017 and 2020, on average, the public sector accounted for 14 percent, the private sector for 82.8 percent, and external aid for 1 percent of total health expenditure. The share of the various financing sources has remained stable except for an increase in the share of public health financing in 2020 driven by the COVID-19 pandemic response (Figure 74). Each of these health expenditure financing sources will now be examined in turn.

**Figure 74. Detailed health expenditure sources in Armenia, 2000–2020. Percentage share**



Source: WHO. (2022). Health Systems in Action: Armenia. Author's analysis.

**Figure 75. External aid per capita, US\$ nominal.**



Source: WHO. (2022). Health Systems in Action: Armenia. Author's analysis.

**214. External aid financing for the health budget has been low and has declined further in recent years.** In keeping with health financing transitions and the policies of development partners, external development assistance for health (DAH) is falling as the country's per capita income increases. The per capita level of external health expenditure (in nominal USD) reached USD 5.2 in 2021 from a high of USD 20.6 in 2007 (Figure 75). This reduction in DAH has been accompanied by a shift from external to government funding for key programs. For example, since 2019, the government has been responsible for 100 percent of the expenditure for the National Immunization Program, which had previously been financed by Gavi, the Vaccine Alliance. However, in 2020, DAH as a percentage of total health spending more than doubled—from 0.5 percent to 1.1 percent—driven by external support for the COVID-19 response (Figure 74).

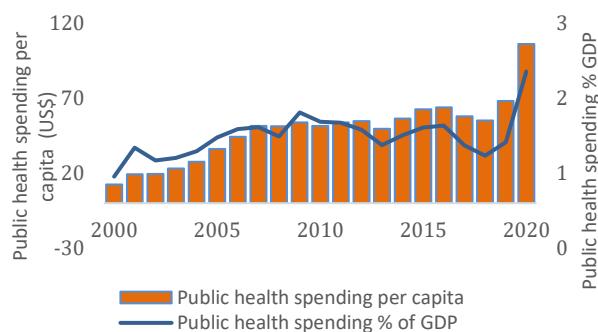
**215. Public spending on health has been roughly constant between 2005 and 2019.** In nominal terms, public health spending increased from AMD 83.2 billion in 2017 to AMD 122.7 billion in 2021, excluding COVID-related additional funds (47 percent increase over four years). Public health spending per capita has also risen over this period. As a share of GDP, public spending on health has remained below 2 percent of GDP between 2000 and 2019 (Figure 76), which is below the UMIC average (3.4 percent) and peers such as Albania, Estonia, Georgia, or Tunisia (Figure 77).

**216. Public spending has also remained constant as a share of the budget until 2019, with a pick-up in 2020 and 2021.** The share of the government's budget devoted to health ranged from 5.5 to 6.2 percent between 2014 and 2019, which puts Armenia at the low end of the spectrum when compared to selected peers.<sup>172</sup> This increased to 7.0 and 7.5 percent in 2020 and 2021, respectively, was mainly due to COVID-19-related emergency financing. As per the approved

<sup>172</sup> WHO. 2022. Global Health Expenditure Database (accessed November 17, 2022). Geneva: World Health Organization. <https://apps.who.int/nha/database>Select/Indicators/en>

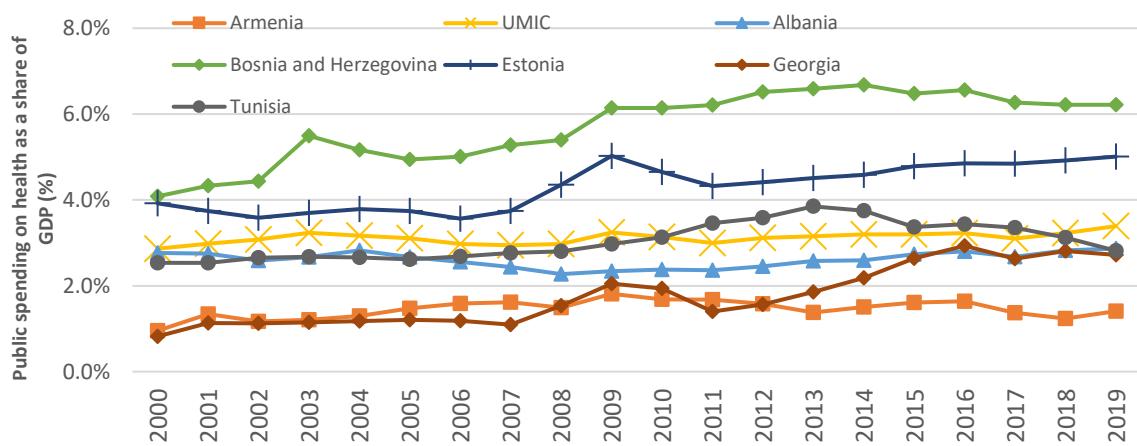
medium-term expenditure framework (MTEF) for 2023-2025, the share of the budget allocated to the health sector (excluding COVID-related funding) is approximately at the same level as for 2020 and 2021. Budget execution rates in the health sector have been healthy, averaging over 95 percent between 2010 and 2019.<sup>173</sup>

**Figure 76. Armenia public health spending as a share of GDP and per capita**



Source: WHO. (2022). Health Systems in Action: Armenia. Author's analysis.

**Figure 77. Public spending on health, 2000–2019, Percent of GDP**



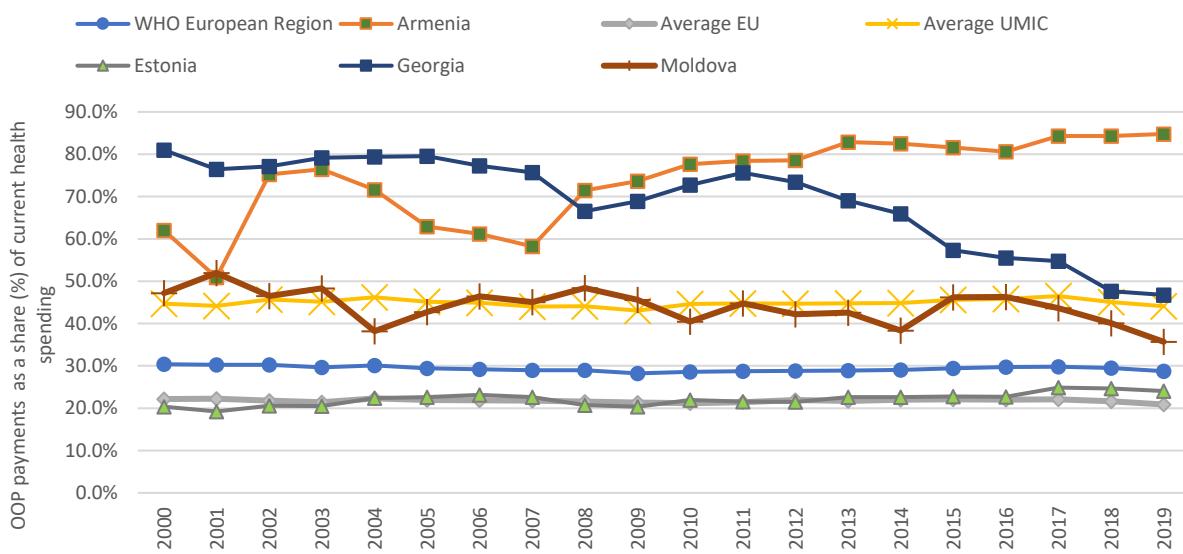
Source: WBG Boost Database.

**217. The private sector financing contribution comes primarily in the form of out-of-pocket (OOP) spending.** Voluntary health insurance (VHI) schemes – that is, prepaid private health spending – play a marginal role in Armenia, accounting for just 1.1 percent of total health expenditure in 2019. In contrast, the share of OOP expenditure has remained high. In 2019, it accounted for 84.8 percent of total health expenditure, the highest among selected peers or almost double the UMIC average of 44.1 percent (Figure 78). As a result of the high share of OOP, the burden of financing health care lies primarily with Armenian households, with negative implications for financial

<sup>173</sup> Chukwuma, A., S. Gurazada, M. Jain, S. Tsaturyan, and M. Khcheyan. 2020. "FinHealth Armenia: Reforming Public Financial Management to Improve Health Service Delivery." <https://doi.org/10.1596/34747>

protection and equity (Box 9). As per a recent analysis, catastrophic health spending – of at or more than 10 percent of total household consumption – exceeded 21 percent in 2017 and is particularly common in households with members living with chronic diseases, in urban areas, among the unemployed, and lower-income households.<sup>174</sup>

**Figure 78. The share of out-of-pocket spending, 2000–2019, Percentage share**



Source: WHO. 2022. Health Systems in Action: Armenia. Author's analysis.

#### Box 9. Deleterious Impacts of OOP in Armenia

The Integrated Living Conditions Survey (ILCS) indicates that financial accessibility to health care remains a major issue, especially for poorer groups of the population. Financial barriers result from formal and informal payments for services, including care that is not subsidized by the state. These barriers are higher among the poor. In 2020, a third (32.6 percent) of surveyed respondents who were categorized as extremely poor indicated lack of finance as the main reason for not seeking primary care, compared with 19.6 percent of the poor and 7.9 percent of the non-poor (ArmStat 2021).

Whereas poverty levels have declined dramatically with economic growth—from 53.5 percent of the population living below the national poverty line in 2004 to 23.5 percent in 2018—the negative impact of poverty on health care access remains. Due to the combined effect of high poverty rates, high OOP expenditure levels, and limited public expenditures in health, it is not surprising that the incidence of catastrophic and impoverishing health expenditure remains high, with a higher incidence among vulnerable groups, including those living with chronic disease or disability and the unemployed (Kazungu et al. 2022).

**218. Turning from financing sources to the composition of public health expenditures, the largest share of Armenia's health budget by far is spent on wages.** In 2021, Armenia spent a high share of the budget on recurrent or operational costs (97.7 percent) and significantly less on capital expenditures (2.3 percent). This is in line with peers such as Moldova (95.5 percent) but less than peers such as Albania and Tunisia, which spent over 10 percent of their public health spending on capital expenditure (Table 15). Within recurrent spending, a significant share is allocated to salaries, bonuses, and other compensation paid to healthcare workers, including doctors, nurses,

<sup>174</sup> Kazungu, Jacob, et al. 2022. "The burden of catastrophic and impoverishing health expenditure in Armenia: An analysis of Integrated Living Conditions Surveys, 2014–2018." PLOS Global Public Health 2.10:e0000494.

and other healthcare professionals. In 2021, Armenia spent 85.0 percent of its overall health budget on wages and compensation, and this share has remained stable from 2010 to 2021.

**Table 15: Comparative overview of spending in health, 2021. Recurrent versus capital expenditure share**

Health budget split, US\$ millions and relative share	Armenia	Albania	Moldova	Tunisia
Recurrent/operational expenditure	215 (97.7)	268 (86.5)	698 (95.5)	910 (89.0)
Capital expenditure	5 (2.3)	42 (13.5)	33 (4.5)	113 (11.0)

Source: World Bank BOOST database

**219. The staffing size of the public health sector has been declining, particularly in terms of nurses and mid-level professionals, while wage levels have picked up but remain close to the national average.** A look at aggregate staffing levels highlights that the number of doctors per capita has increased marginally while the number of nurses and mid-level professionals per capita declined significantly between 1990 and 2020 (Table 16). In 2017, the number of doctors per capita was marginally above the European average (44 per 10,000 versus 38.2 per 10,000 regional average), while the number of nurses and mid-level professionals was well below the European average (54.5 per 10,000 versus 91.5 per 10,000 regional average). In addition, aggregate staffing levels mask significant regional disparities. In 2019, 73 percent of doctors and 53 percent of mid-level professionals were working in Yerevan, disproportionately to its share in the population (36 percent). The number of nurses per doctor was 0.86 in Yerevan versus 2.13 in the regions, reflecting the relative lack of doctors in the regions. This reflects the concentration of hospitals in Yerevan as well as the challenges of attracting health workers to live in the regions, with evidence of high rates of vacancies and high turnover.<sup>175</sup> Historically, public health worker wages have been less than the average nominal wage in Armenia, but this has converged recently with nominal wage growth in the health sector exceeding average wage growth.

**Table 16: Healthcare professionals in Armenia and their average wage**

Source: Ministry of Health and Armstat

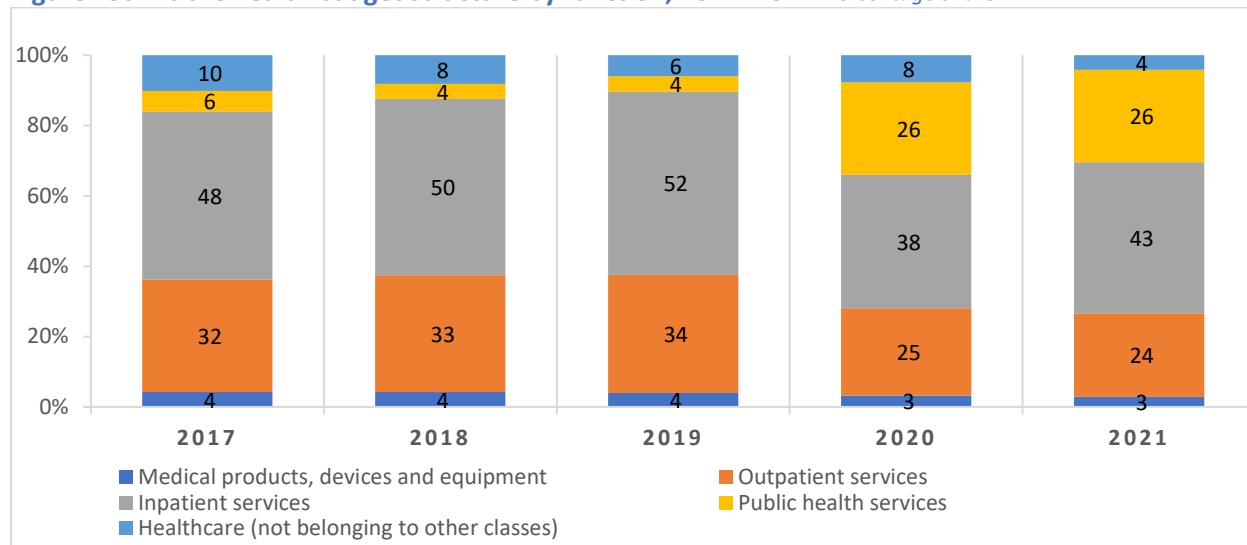
	1990	2000	2010	2019
Number of medical doctors (all specialties)	14,519	12,270	13,591	13,958
Number of medical doctors per 10,000 people	41.3	38.0	44.5	47.2
Number of nurses and other midlevel medical staff	34,953	22,632	18,649	16,772
Number of nurses and other midlevel medical staff per 10,000 people	99.4	70.1	61.0	56.7
Public health workers average wage compared to total average wage (%)	NA	59.8%	63.0 %	102.5%

<sup>175</sup> Chukwuma, A., S. Gurazada, M. Jain, S. Tsaturyan, and M. Khcheyan. (2020). "FinHealth Armenia: Reforming Public Financial Management to Improve Health Service Delivery." <https://doi.org/10.1596/34747>

**220. Turning to functional classifications, funding for inpatient (hospital) care dominates public health spending.** Although primary care is a stated priority in national health policies, the structure of the public health budget is still dominated by inpatient care. Similar situations prevail in comparable countries such as Georgia, Albania or Estonia (WHO 2019 and OECD 2021 country reports). Between 2017 and 2021, funding for inpatient care accounted for an average of 45 percent of the health budget as compared to on average 28 percent for outpatient services (primary health care) (Figure 79a). A more detailed look at spending by function for 2021 shows that inpatient services are driven by general hospital services followed by medical, mother and child services centers, and specialized hospital services (Figure 79b). The skew towards hospital care is also evident in total health expenditure (including public and private health expenditure). Between 2015 and 2021, hospitals received the largest share of total health funding, followed by ambulatory (outpatient) medical services, which comprises PHC. Annex 4.1 provides a deeper look at specific programs within the health budget and their geographic dispersion.

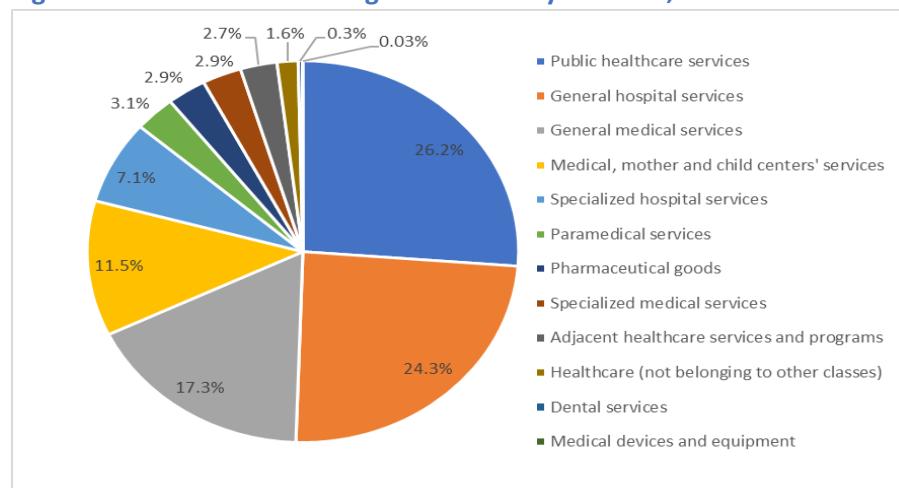
**Figure 79.**

**Figure 79a. Public health budget structure by function, 2017–2021. Percentage Share**



Source: Ministry of Finance of the Republic of Armenia (2022)

**Figure 79b. Public health budget structure by function, detail 2021. Percentage share**



Source: Authors' analysis of WBG BOOST database

## Section 4.4: Efficiency of public health expenditures

**221. The impact of spending on health system outcomes depends on the extent to which resources are used efficiently.** This section will provide an overview of the extent of inefficiencies in health spending in Armenia (Section 4.4.1), and then highlights some of the key drivers of these inefficiencies, which includes fragmented public health spending and suboptimal purchasing arrangements of health services (Section 4.4.2), inefficient allocation of spending towards hospital care (Section 4.4.3), and high pharmaceutical costs (Section 4.4.4). The selection of these constraints draws on previous World Bank assessments and ongoing World Bank support to sector reforms.

### Section 4.4.1: Quantifying health spending inefficiency in Armenia

**222. A data envelopment analysis (DEA) was used to measure the relative technical efficiency of transforming inputs (health financing) into outputs (health outcomes) in the health sector relative to comparator countries.<sup>176</sup><sup>177</sup>** The analysis estimated two aspects of efficiency: (i) potential increases in health system performance that might be attained within the current level of inputs (output-oriented model); and (ii) potential savings in health expenditure for the current level of health system performance (input-oriented model). The range of health outcomes, health inputs, and model corrections for population-level predictors of health outcomes are provided in Table 17.<sup>178</sup> The preferred model specification for estimating public health spending efficiency is Model 4, which corrects for the bias introduced by population level health outcomes.

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<sup>176</sup> The analysis in this section is drawn from the following report: Chukwuma, A., et al. (2021). "More money for health: Resource mobilization for Universal Health Coverage in Armenia." Washington, DC: World Bank. The DEA is a non-parametric linear programming technique in which deviations between observed values and an estimated production possibility frontier are attributed to inefficiency.

<sup>177</sup> Comparator countries were chosen in discussion with the Ministry of Health and fulfilled one of three criteria: located in ECA, similar life expectancy, and shared political history as post-Soviet states. The comparators include: Belarus, Croatia, Estonia, Georgia, Hungary, Moldova, Russia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkey, Ukraine, and Uzbekistan. The selection of comparators has an impact on the production possibility frontier and in turn on the estimated efficiency of the system. For example, a selection of comparators for Armenia that includes better performing health systems could increase the estimated inefficiency of the system in Armenia.

<sup>178</sup> To estimate the efficiency of total and public health spending, the model adjusts for population-level predictors of health outcomes, including GDP per capita, prevalence of overweight, total alcohol consumption per capita, and prevalence of tobacco use in 2016.

**Table 17:. DEA model specifications**

OUTPUT VARIABLES	INPUT VARIABLES			
	Model 1	Model 2	Model 3 (Adjusted Model 1)	Model 4 (Adjusted Model 2)
Life-Expectancy At Birth	Total Spending on Health per Person	Government Spending on Health per Person	Total Spending on Health per Person +	Government Spending on Health per Person +
Healthy Life-Expectancy At Birth			1. GDP per capita in PPP	1. GDP per capita in PPP
Life-Expectancy At 60			2. % Overweight population (i.e. with BMI>=25)	2. % Overweight population (i.e. with BMI>=25)
Healthy Life-Expectancy At 60			3. Total alcohol con- sumption per capita	3. Total alcohol con- sumption per capita
Health-Adjusted Life Ex- pectancy			4. Tobacco 2016	4. Tobacco 2016
Amenable Mortality Rate				
Mortality Rate (Adults)				
Mortality Rate (Under-five)				

Source: World Bank. (2021). "More money for health: Resource mobilization for Universal Health Coverage in Armenia."

**223. The analysis highlights that, with more efficient public spending, Armenia could achieve better health outcomes with the same level of public spending.** Table 18 presents the efficiency scores for Armenia across the range of health outcomes. These scores represent the fraction of observed inputs that can achieve the observed output if the health system were to be efficient. In the models that adjust for GDP per capita and population health risks, it is estimated Armenia could have a life-expectancy at birth that is 1.31 years higher, a healthy life expectancy at birth that is 1.07 years higher, an adult mortality rate that is 12 percent lower, and an under-five mortality rate that is 22.58 percent lower, if the health system achieved the efficiency of the best-performing comparators.<sup>179</sup>

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<sup>179</sup> As noted earlier, the estimate of efficiency is sensitive to the selection of comparators and could be higher if comparators with better performing health systems are chosen.

**Table 18: Efficiency scores for bias-corrected DEA180**

OUTPUTS (HEALTH OUTCOMES)		HEALTH INPUTS		HEALTH INPUTS + ECONOMIC AND LIFESTYLE VARIABLES	
		Total Spending on Health per Person (2018 US Dollars)	Government Spending on Health per Person (2018 US Dollars)	1. Total Spending on Health per Person (THS) 2. GDP per capita in PPP 3. % Overweight population (i.e., with BMI>=25) 4. Total alcohol consumption per capita 5. Tobacco 2016	1. Government Spending on Health per Person (GHS) 2. GDP per capita in PPP 3. % Overweight population (i.e. with BMI>=25) 4. Total alcohol consumption per capita 5. Tobacco 2016
M1	<b>Life-Expectancy At Birth</b>	0.63	0.63	0.92	0.93
M2	<b>Healthy Life-Expectancy At Birth</b>	0.74	0.61	0.91	0.92
M3	<b>Life-Expectancy At Birth At 60</b>	0.51	0.68	0.93	0.93
M4	<b>Healthy Life-Expectancy At Birth At 60</b>	0.65	0.69	0.92	0.92
M5	<b>Health-Adjusted Life-Expectancy</b>	0.57	0.62	0.92	0.92
M6	<b>Amenable Mortality Rate, %</b>	0.44	0.66	0.93	0.92
M7	<b>Mortality Rate (Adult), %</b>	0.32	0.57	0.80	0.89
M8	<b>Mortality Rate (Under-five), %</b>	0.25	0.69	0.82	0.88

Source: World Bank. (2021). “More money for health: Resource mobilization for Universal Health Coverage in Armenia.”

**224. Looking at it another way, with efficiency improvements, Armenia could generate per capita expenditure savings to achieve the same outcomes with less spending.** Table 19 provides the estimated potential per capita savings that would accrue to improvements in efficiency of spending on health. For example, in the models that adjusted for GDP per capita and population health risks, the potential per capita savings lies between USD 0.43 (or AMD 206) in per capita terms when the outcome considered is adult mortality, and USD 35.44 (or AMD 17,011) in per capita terms when the outcome considered is child mortality. This is equivalent to a health system savings of AMD 0.6 billion (0.01 percent of 2018 GDP) if adult mortality is considered and AMD 3.5 billion (0.06 percent of 2018 GDP) if under-five mortality is used to benchmark Armenia against comparators.<sup>181</sup>

<sup>180</sup> This reports the efficiency gains for Model 4 specification, which corrects for the bias introduced by population health outcomes and accounts for GDP per capita.

<sup>181</sup> The estimate of savings is sensitive to the selection of comparators and could be higher if comparators with better performing health systems are chosen.

**Table 19: Potential per capita savings (in US dollars) with efficiency improvements**

OUTCOME VARIABLE	HEALTH INPUTS		HEALTH INPUTS + ECONOMIC AND LIFESTYLE VARIABLES		
	Total Spending on Health per Person (2018 US Dollars)	Government Spending on Health per Person (2018 US Dollars)	1. Total Spending on Health per Person (THS) 2. GDP per capita in PPP 3. % Overweight population (i.e. with BMI>=25) 4. Total alcohol consumption per capita 5. Tobacco 2016	1. Government Spending on Health per Person (GHS) 2. GDP per capita in PPP 3. % Overweight population (i.e. with BMI>=25) 4. Total alcohol consumption per capita 5. Tobacco 2016	
M1 Life-Expectancy At Birth	68.78	7.24	67.28	2.69	
M2 Healthy Life-Expectancy At Birth	18.18	8.22	275.20	17.44	
M3 Life-Expectancy At Birth At 60	136.35	2.53	46.27	6.82	
M4 Healthy Life-Expectancy At Birth At 60	45.92	0.00	92.89	9.56	
M5 Health-Adjusted Life-Expectancy	89.85	6.79	45.43	7.06	
M6 Amenable Mortality Rate, %	157.51	4.20	76.40	4.32	
M7 Mortality Rate (Adult), %	199.81	0.00	103.36	0.43	
M8 Mortality Rate (Under-five), %	250.71	7.96	334.81	35.44	

Source: World Bank. (2021). “More money for health: resource mobilization for Universal Health Coverage in Armenia.”

**225. The inefficiencies existing in Armenia today are also illustrated by commonly used health service delivery matrices such as the high rates of cesarean section (c-sections).** C-sections are a surgical procedure in which a baby is delivered through incisions made in the mother's abdomen and uterus and have recently become a measure for quality of care in healthcare systems. While c-sections can be lifesaving for both mother and baby in certain situations such as in cases of obstructed labor or fetal distress, they are often performed unnecessarily.<sup>182</sup> The rate of c-sections has been increasing worldwide, with the WHO maintaining that ideal rates of c-sections should range between 10 and 15 percent.<sup>183</sup> Many countries, including in the South Caucasus, have rates of this procedure higher than this norm. The rate in Armenia is estimated at 31 percent in 2017 (Table 20). Among Armenia's comparators, Moldova has one of the lowest rates in the world, almost meeting the WHO recommended target (Table 20).

<sup>182</sup> A high c-section rate does not indicate better healthcare outcomes as the procedure carries risks such as infection, bleeding, and longer recovery times. C-sections have recently also been found to increase the risk of certain diseases such as colorectal cancer in children. Additionally, unnecessary c-sections can increase healthcare costs and reduce the likelihood of successful vaginal births in future pregnancies. It is therefore important for healthcare providers to only recommend c-sections when medically indicated and to prioritize the safety and well-being of both mother and baby. On a governmental level, incentives need to be such that c-sections are only used as a last resort intervention when medically indicated.

<sup>183</sup> WHO. 2015. “WHO Statement on Cesarean Section Rates.” Geneva, Switzerland.

**Table 20: Comparative overview of c-section rates, 2015-2021, Armenia and selected peer countries**

	Armenia	Albania	Georgia	Moldova	Tunisia
C-section rate (percent)	31.0 (2017)	27.3 (2015)	35.1 (2021)	18.2 (2018)	34.0 (2021)

Source: WHO reports and health database, 2015-2021.

**226. The following sections will now consider some of the key drivers of public health expenditure inefficiencies.** This is not an exhaustive list of constraints on spending efficiency, but these have been identified as critical to address based on past World Bank sector assessments and ongoing health reform policy dialogue.<sup>184</sup>

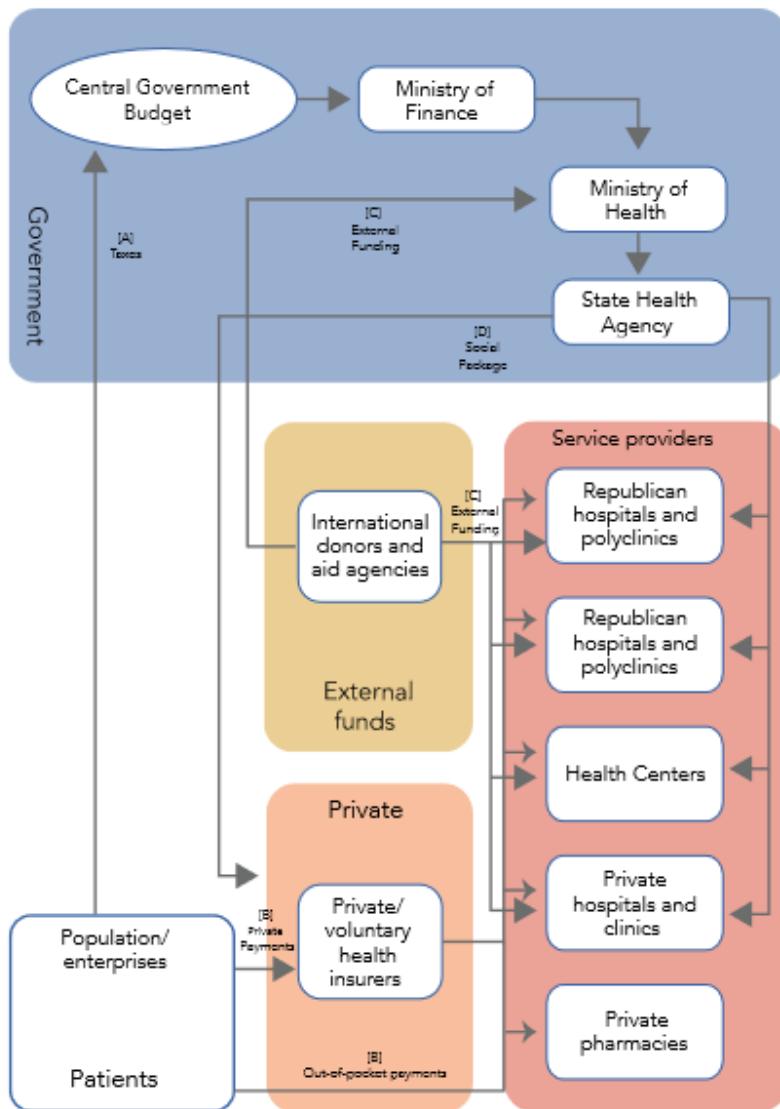
Section 4.4.2: Fragmented public health spending and non-strategic purchasing arrangements contribute to inefficiency of health spending

**227. Financing flows in the health sector are fragmented, leading to inefficiencies and inequity.** A significant proportion of public financing is pooled by the State Health Agency (SHA), which purchases services on behalf of the Ministry of Health (MoH) (Figure 80). However, public funds also flow to multiple insurers (also referred to as third-party administrators) for a subset of government workers. The Ministry of Defense and the Police also have separate pools for the health services they provide.<sup>185</sup> Adding to this fragmented set of arrangements is the fact that multiple employer-subsidized schemes have separate pools of voluntary contribution, as discussed earlier, form a small proportion of total health spending. In addition, high levels of OOP imply that most health spending bypasses the state purchaser. In addition to inefficiencies created by duplicative costs and lost opportunities to cross-subsidize financial risk (between the young and old, rich and poor, as well as the healthy and sick), the fragmentation of funding flows in Armenia contributes to inequity by creating noncommunicating “islands” in society, thereby making it difficult to weigh the claimed priorities and needs of different groups against each other and linking spending to the ability to pay rather than to need. Related to this, fragmentation in health provision contributes to information asymmetry, which, together with the urgency of health needs, often implies that households cannot make optimal decisions in seeking care.

<sup>184</sup> These reports include: (i) “More money for health: Resource mobilization for Universal Health Coverage in Armenia;” (ii) “FinHealth Armenia: Reforming Public Financial Management to Improve Health Service Delivery;” and (iii) “Strategic Purchasing for Better Health in Armenia”.

<sup>185</sup> Chukwuma, Adanna Deborah Ugochi, Bruno Meessen, Hratchia Zaven Hratchia Lylozian, Emma Ghazaryan, and Estella Tian-Ran Gong. (2020). “Strategic Purchasing for Better Health in Armenia.” Washington, DC: World Bank.

**Figure 80. Financial flows in the Armenian healthcare system**



Source: Authors' adaptation from: Richardson E. (2013). "Armenia: Health System Review." *Health Systems in Transition* 15 (4): 1-99.

**228. The strategic purchasing function of the SHA has been eroded over time and cannot initiate significant changes to resource allocations or deploy tailored purchasing mechanisms for different providers or services.<sup>186</sup>** Following its establishment in the late 1990s, its legal status as an independent agency has been revised down to a unit within the MoH and an independent management board has not been established. Since the MoH provides health care directly, the current arrangement negates the best practice of separating purchasing and provision to facilitate objective contracting decisions. All contracts with providers are signed by the MoH, while SHA prepares the contracts, including global budgets for each provider, reporting, and auditing. This means that the SHA does not play a strategic role, cannot initiate major changes to resource

<sup>186</sup> Chukwuma, A., S. Gurazada, M. Jain, S. Tsaturyan, and M. Khcheyan. 2020a. "FinHealth Armenia: Reforming Public Financial Management to Improve Health Service Delivery.: <https://doi.org/10.1596/34747>

allocations, and does not deploy tailored purchasing mechanisms for different providers or services.

**229. To strengthen the purchasing function, the government piloted the involvement of Third-Party Administrators (TPAs) to administer health benefits for civil servants under a competitive insurance model.** This arrangement, which began in 2017, delegated the payment of claims for the social package to six TPAs, aiming to improve access and efficiency via competition between these private insurers, who were licensed by the Central Bank of Armenia. However, the MoH and SHA continued to administer health benefits to the rest of the population. In addition, the payment mechanisms for providers and the definition of the benefits package remained as set by the MoH and SHA. Individuals were allocated to the insurers annually and could be randomly reassigned if there was a clear rationale. A prospective lump sum based on the number of beneficiaries was transferred every month to each insurer, with room for the insurer to retain profits if the expenditure was lower than this transfer, together with the responsibility to settle valid claims exceeding the total transfer. Number of beneficiaries and loss ratio in 2022 for each six insurance companies presented in Annex 4.2.

**230. Another significant source of inefficiency regarding purchasing of services is the non-optimal design of health benefits.** Following an initial design that was evidence-driven and inclusive, the BBP's scope has since then been revised based on political considerations rather than optimized to address population health goals. The initial BBP introduced in 1999 was informed by technical assessments and stakeholder consultations with support from the international expert community and was adopted by Parliament. Local capacity for health technology assessments to inform future changes is not developed in Armenia, nor is there a regulatory framework to inform analysis and consultations required to revise the BBP. Since 2001, Parliament has delegated responsibility for authorizing BBP changes to the MoH, and these modifications have not been informed by the changing burden of disease, nor by the need to protect the population from financial risk.<sup>187</sup> As a result, allocations are relatively inefficient. For example, in a recent optimization analysis, adjusting allocations across services in the 2019 budget to better reflect the burden of disease, service cost-effectiveness, and financial protection is estimated to have averted an additional 10,600 to 31,400 disability-adjusted life-years (a technical term for unhealthy years) as a result of increased funding for cardiovascular, musculoskeletal, and cancer services.<sup>188</sup>

**231. Purchasing of services is also inefficient due to the current payment mix, which incentivizes cost containment at the PHC level and an increased supply of hospital care.** Since the late 1990s, primary care services have been funded on a per capita basis according to the number of people enrolled with each primary care provider rather than via line-item budgets. Bonuses are also provided via performance-based payments for selected services, including NCD screenings (Box 10). Finally, outpatient diagnostic tests and prescriptions are reimbursed on a fee-for-service basis with caps. However, the capitation rates are infrequently reviewed and are relatively low,

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<sup>187</sup> Chukwuma, Adanna Deborah Ugochi, Bruno Meessen, Hratchia Zaven Hratchia Lylozian, Emma Ghazaryan, and Estella Tian-Ran Gong. (2020). "Strategic Purchasing for Better Health in Armenia." Washington, DC: World Bank.

<sup>188</sup> Fraser et al. (2021). "Reforming the Basic Benefits Package in Armenia: Modeling Insights from the Health Interventions Prioritization Tool." Washington, DC: World Bank.

incentivizing the undersupply of services. Hospital services are mainly paid for on a per-case basis, using a mix of average case tariffs and fee-for-service. To garner more revenue, inpatient care providers have an incentive to maximize the number of discharged patients for cases reimbursed at higher levels. While service users can select their primary care providers, which in principle should incentivize better quality to attract patients, limited options in rural areas blunt its impact. There are also no payments linked to quality, nor have more recent innovations in provider reimbursement to reduce hospital-centric care (such as population-based and bundled payments) been considered.

#### Box 10. Lessons from Provider Payment Reforms

A supplementary performance-based financing (PBF) scheme has been in place since 2010 to incentivize primary care providers to improve their performance and the quality of their services. These payments have led to increases in coverage for targeted services. However, the PBF scheme has only partially accomplished its goal because of the overall low level of public financing and the additional administrative work required to apply for the scheme. Another cost-containment measure the MoH has implemented is the global annual cap for facility budgets under the BBP. However, this cap can be revised during the year as needed.

Despite some episodic reform efforts in the past, Armenia has still not implemented a diagnosis-related group-based cost structure for hospital services. Consequently, average tariffs are usually highly aggregated, often not reflecting the actual cost of service provision. This problem contributes to the high level of OOP payments because the gap between the remuneration rate under the BBP and the actual cost of the service is usually covered through informal payments. To address this issue, official copayments were introduced in 2011 for certain categories of BBP services, with socially vulnerable categories of BBP beneficiaries exempted from the copayments. Since 2019, the scope and rate of copayments have been revised periodically because an increase in the health budget has resulted in more services being covered publicly, with no need for copayments.

In summary, over the past 15 years, Armenia has implemented or tried to implement different provider payment reforms, for example, PBF, budget caps, copayments, in order to change incentives for health care consumption. Yet ultimately, the measures have not led to a higher use of primary versus secondary care.

#### Section 4.4.3: Despite reforms, services remain hospital-centric

**232. Despite progress, the health system remains hospital-centric and has failed to evolve with the evolving disease burden.** As noted in Section 4.1, economic shocks following the dissolution of the Soviet Union in 1991 spurred reforms that led to a significant reduction in excess hospital infrastructure, reduced incentives to expand inpatient care, and strengthened the role of primary care. This first generation of reforms aimed to move the system away from hospital-centric care and towards primary care. Nevertheless, the system is still largely hospital-centric and characterized by low utilization of primary health care (PHC). In 2017, the latest year for comparable regional data, the average annual number of PHC visits in Armenia was 4.1, falling from 7.8 in 1990 and lower than the average of 7.6 within the World Health Organization (WHO) European Region. These low utilization rates persist in an environment with excellent physical access to health facilities as the average Armenian is within 14 minutes of walking distance of a PHC center.<sup>189</sup> In addition, an estimated 67 percent of hospital visits in Armenia are not preceded by a PHC visit. The low utilization of PHC is of particular concern since, as noted in Section 4.2, the

<sup>189</sup> World Bank. (2023 Forthcoming). "Building Effective Primary Healthcare in Armenia."

growing burden of NCDs is the principal concern for population health and global evidence suggests primary care plays a central role in effectively and efficiently managing NCDs.<sup>190</sup>

**233. The main reasons for the low use of primary health care are concerns about quality (40 percent) and the additional cost of seeking primary care (27 percent).**<sup>191</sup> Concerns about quality are driven by service delivery challenges, including gaps in the quality of care and limited oversight of the quality of care provided at the primary care level.<sup>192</sup> Referral from primary care is required only for claims for hospital consultations under specific sub-packages of the BBP. As a result, there is widespread bypassing of primary care, which is seen as an additional cost burden. A reported 66 percent of hospital visits are not preceded by a consultation with a family physician or general practitioner at primary care level.

**234. The bypassing of primary care is mirrored by unnecessary hospital and emergency care use.** For example, ambulance use rates are some of the highest in the world, at 600 calls per day, given the small population and the findings of a recent analysis indicating that 75 percent of emergency calls are not for true emergencies.<sup>193</sup> There is also overuse of specialist care in Yerevan, where narrow specialists are often co-located with primary physicians in polyclinics. This pattern is partly due to the absence of a national health facility distribution roadmap and minimal gatekeeping for specialist care.

**235. This suboptimal skew toward hospital care and away from primary care is also reflected in public spending patterns and contributes to spending inefficiency.** As noted in Section 4.3, public health spending remains skewed, with hospital care accounting for 45 percent of spending as compared to 28 percent of spending on PHC on average between 2017-2021. An analysis overlapping with this period showed that only 36.2 percent of Ambulatory Care Sensitive Conditions (ACSC) were served in primary care units and the rest were managed through outpatient or inpatient visits to hospitals.<sup>194</sup> Given that hospital care is more expensive than primary care, addressing this issue could lead to an estimated AMD 27 billion in efficiency savings (0.4 percent of GDP).

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<sup>190</sup> World Bank. (2021). "Walking The Talk: Reimagining Primary Health Care after COVID-19." Washington, DC: World Bank.

<sup>191</sup> National Institute of Health. (Forthcoming). "Health Systems Performance Assessment 2022;" World Bank. (2023 Forthcoming). Building Effective Primary Healthcare in Armenia.

<sup>192</sup> For example, nearly 40 percent of facilities do not have basic diagnostic tests for diabetes, anemia, or pregnancy confirmation. Furthermore, 57 percent of urban polyclinics do not have x-ray machines, ultrasound machines, or echocardiograms to support routine annual check-ups. In terms of regulation, no unit in the MoH is designated as responsible for quality regulation, including developing guidelines and monitoring services. Furthermore, while there have been numerous exercises to develop clinical guidelines, these standards were often not tailored to the local context or linked to the purchasing of services. There are also no clinical safety protocols. Providers are also not mandated to adhere to the existing clinical guidelines, and since 2001, providers are also not licensed.

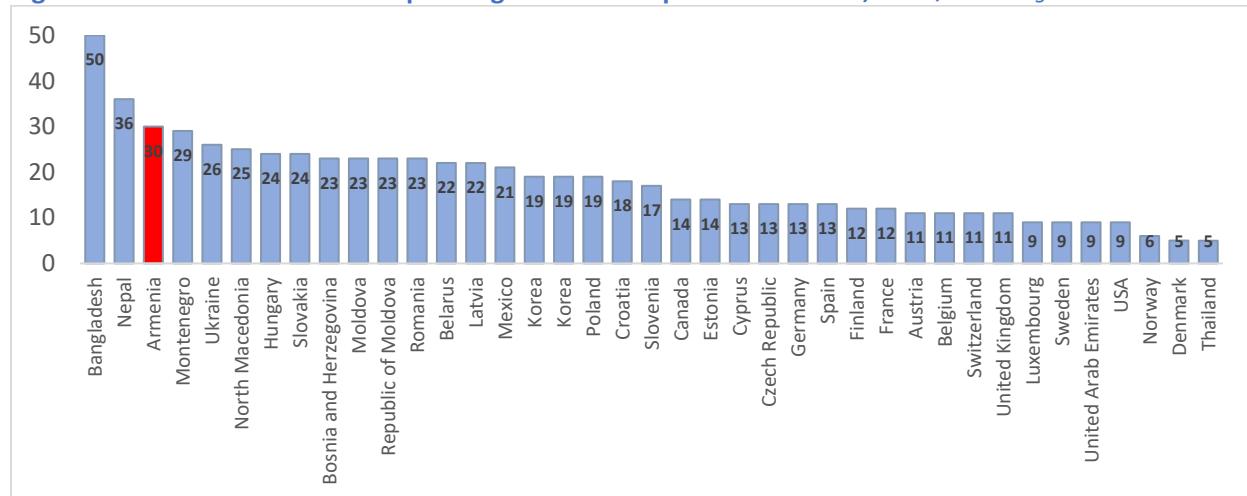
<sup>193</sup> Chekijian S., Truzyan N., Stepanyan T., and Bazaryan A. (2021). (2021). "Healthcare in transition in the Republic of Armenia: The evolution of emergency medical systems and directions forward." *International Journal of Emergency Medicine*, 14(1):5. <https://doi.org/10.1186/s12245-020-00328-3>

<sup>194</sup> World Bank. Forthcoming. "Building Effective Primary Healthcare in Armenia."

## Section 4.4.4: Pharmaceutical spending is high and drives high OOP, reflecting regulatory gaps

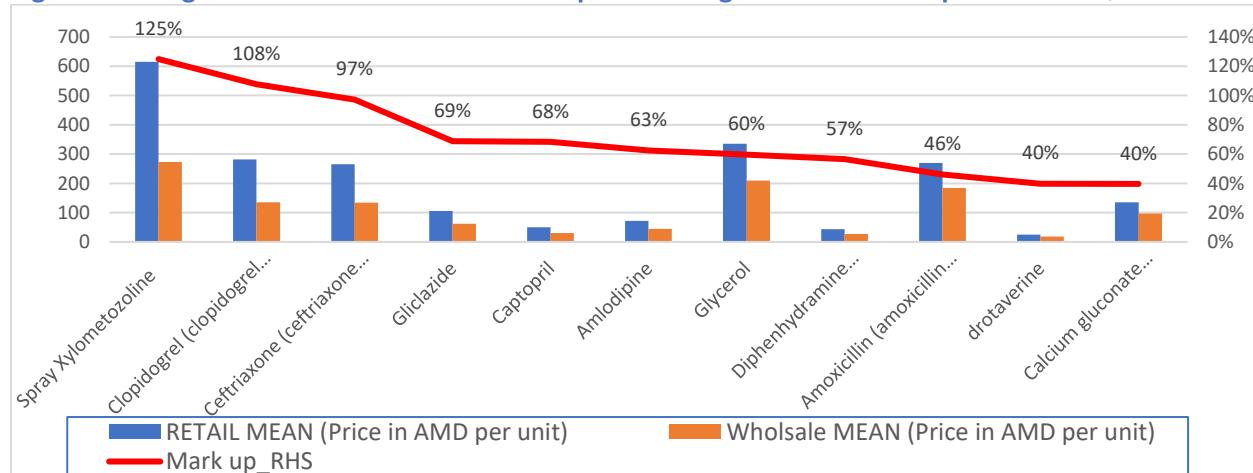
**236. Pharmaceutical spending and medicine prices are relatively high and indicative of potential inefficiencies.** About 30 percent of total health spending in Armenia is on medicines and medical supplies, which is high for a UMIC (Figure 81). Retail prices are relatively high.<sup>195</sup> The difference between wholesale and retail prices across molecules ranges from 2 to 125 percent (Figure 82), and at an average of 29 percent exceeds the markups in comparator countries. Cross-country differences in retail prices reflect several factors, including manufacturer charges, distribution costs, and the 20 percent value-added tax (which is the highest in the region).

**Figure 81. Share of total health spending allocated to pharmaceuticals, 2020, Percentage share**



Source: WHO. (2022). *Global Spending on Health: Rising to the Pandemic's Challenges*. Geneva: World Health Organization.

**Figure 82. Drugs with the wholesale and retail price and highest retail markups in Armenia, Percent**



Source: Market Performance Group (MPG). Forthcoming. "Pharmaceutical Market Assessment for Armenia: Public Expenditure Review." Washington, DC: World Bank.

<sup>195</sup> Market Performance Group (MPG). Forthcoming. "Pharmaceutical Market Assessment for Armenia: Background Note for the Public Expenditure Review." Washington, DC: World Bank.

**237. Given limited coverage for medicines in the state-funded BBP, OOP plays a significant role in financing pharmaceutical expenditures, with consequences for household welfare.** In the 2021 state budget, only 2.8 percent of spending is allocated to medicines. As a result, about 39 percent of all spending on medicines comes from OOP, with 80 percent of Armenians who repeatedly purchase medicines for NCDs report purchasing them with out-of-pocket spending. These medicine purchases have significant welfare consequences. Of these “regular purchasers, 53 percent report reducing spending on other essential household items (such as food or heating) to procure medicines, 11 percent report selling household goods to buy medicines, and 31 percent report having to forgo medicines for lack of funds. Furthermore, pharmaceutical prices have continued to rise: between December 2020 and 2021, the average consumer price for pharmaceuticals grew by 11.1 percent.

**238. Given the importance of pharmaceutical expenditures, a pharmaceutical market assessment was commissioned for this PER.** The assessment was undertaken by Market Performance Group (MPG) LLC and included primary data collection on pharmaceutical prices,<sup>196</sup> analysis of a sample generic versus brand name prescriptions, a listing of licensed manufacturers (suppliers), wholesalers and pharmacies, calculation of average wholesale and retail markups for a selection of drugs, and interviews of key market players. The assessment highlights several inefficiencies in the market, starting with the lack of a system for regulating medicine prices. There are clear regulations on obtaining licenses to manufacture, distribute (wholesale) and store medicines. However, for most of the medicines, the licenses are termless, except for narcotics and psychotropic drugs with three-year licenses. There is no regulatory system or oversight of medicines prices in retail markets. As a result, the high prices are in part shaped by the relative monopoly and unfair business and competition environment in the import, wholesale, and retail pharmaceutical market in Armenia.<sup>197</sup>

**239. Market power is reflected in significant markups.** Between import and wholesale, these markups are typically up to 100 percent, and for certain in-demand medications, the markup is even higher. For example, Validol, an anti-anxiety medication, is estimated to have an import-wholesale markup of up to 250 percent. Wholesale to retail markups are also high (Figure 82). The assessment highlights that the same companies dominating the wholesale market often run networks of retail pharmacies and set prices at the retail level, which appears to more than compensate for differences in distribution costs.<sup>198</sup> This is not well regulated – for example, there are no caps imposed on retail markups for wholesalers that also operate retail pharmaceutical chains, as is the case in other European countries.

**240. At the delivery level, the assessment indicates that savings could be made from the regulation of physician prescribing practices and procurement.** There is currently no regulation in place to monitor prescribing behavior among providers. The prescription of cheaper generic medicines versus more expensive brand-name medicines varies widely in the system. A survey of 16 hospitals indicated that about 47 percent of prescriptions are brand-name. The prevalence of

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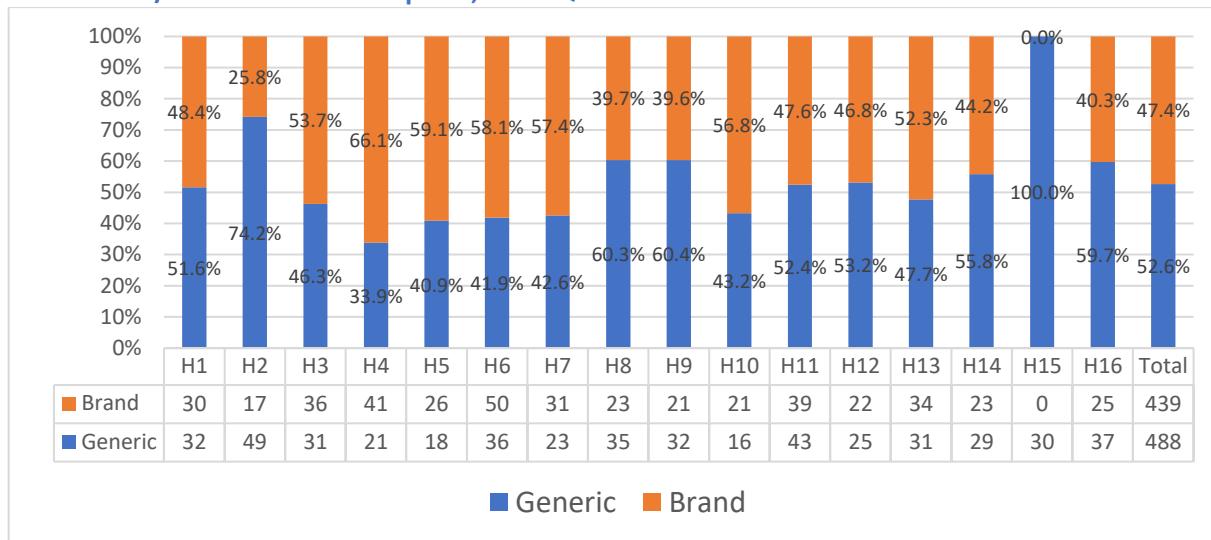
<sup>196</sup> These data were collected on 50 commonly used molecules from 20 hospitals and 20 PHC centers from Yerevan and selected “marzes” (administrative, territorial units).

<sup>197</sup> Retail, wholesale, and import markets in Armenia are relatively monopolized among five companies, which raises concerns about market power and unfair competition.

<sup>198</sup> Market Performance Group (MPG). Forthcoming. “Pharmaceutical Market Assessment for Armenia: Public Expenditure Review.” Washington, DC: World Bank.

brand-name prescriptions in public primary care facilities (about 33 percent) is lower (Figure 83a, 83b). However, in the sole private primary care center for which data is available, 72 percent of prescriptions were brand-name. This indicates room for promoting cheaper generic alternatives and off-patent original products, particularly for medicines procured using public funds.

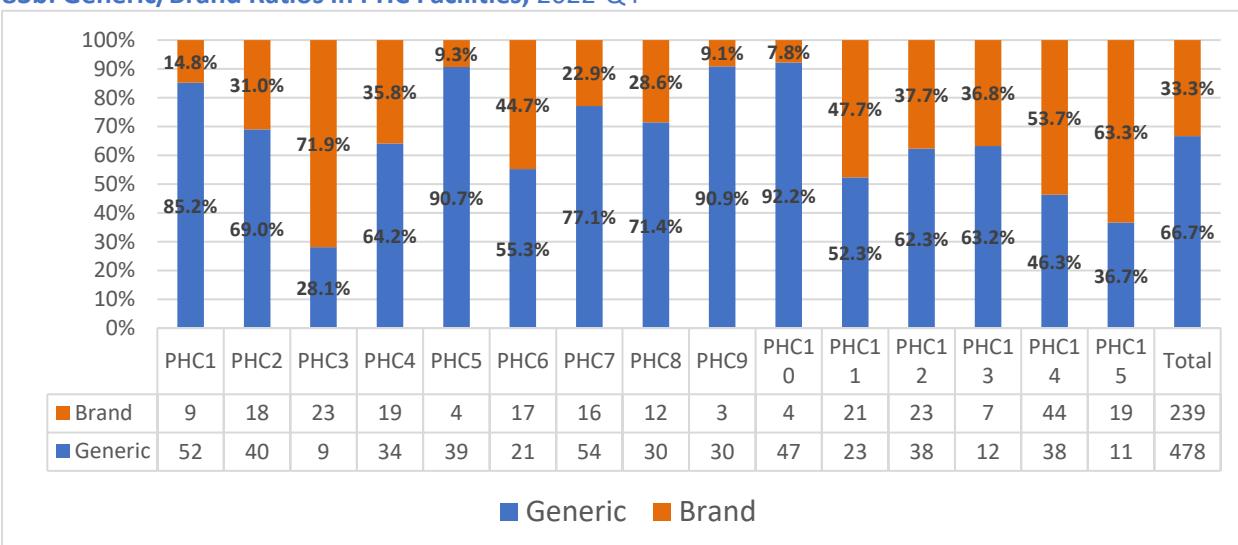
**Figure 83. Drug prescription in inpatient and outpatient facilities in Armenia**  
**83a: Generic/Brand Ratios in Hospitals, 2022-Q4**



Note: "H" represents hospitals that were interviewed.

Source: Market Performance Group (MPG). Forthcoming. "Pharmaceutical Market Assessment for Armenia: Public Expenditure Review." Washington, DC: World Bank.

**83b: Generic/Brand Ratios in PHC Facilities, 2022-Q4**



Note: "PHC" represents Primary Health Care centers that were interviewed.

Source: Market Performance Group (MPG). Forthcoming. "Pharmaceutical Market Assessment for Armenia: Public Expenditure Review." Washington, DC: World Bank.

**241. The assessment also finds significant differences in purchasing prices for inpatient and outpatient facilities, again signaling problems in how the pharmaceuticals market functions.**

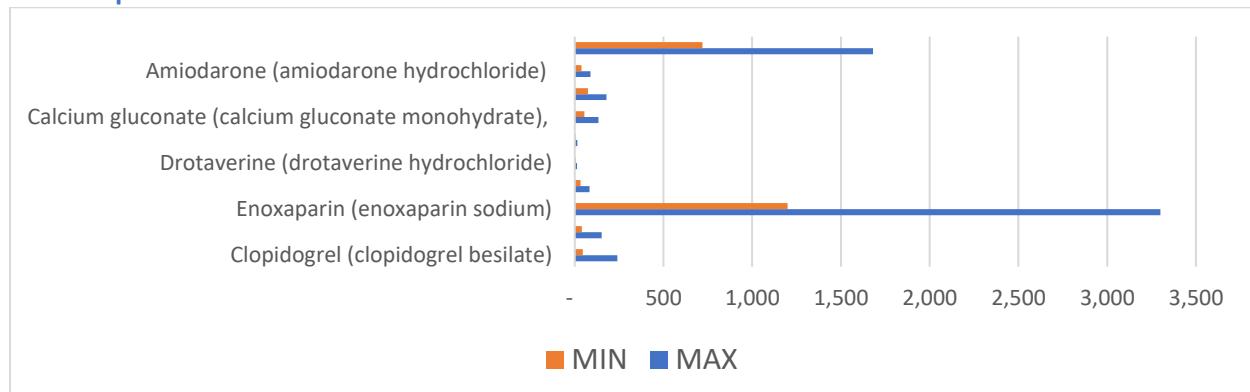
Lower prices were observed in regional outpatient facilities and in the capital city of Yerevan compared to other regions. An example is the large variation in prices for bupivacaine and enoxaparin in hospitals and for ramipril, spironolactone, and ibuprofen in PHC facilities (Figure 84a, 84b). Smaller facilities often do not have the requisite skills to define technical specifications needed for pharmaceutical procurement or to accurately forecast the volumes needed. As the payer's market power is determined by the size of the market represented, smaller facilities are not able to shape product consumption values or attract competitive prices. In an earlier analysis of facility-level procurement of 2,147 medicines, the average variation in drug prices was 42 percent, with an estimated AMD 1.3 billion (0.02 percent of GDP) in efficiency losses.<sup>199</sup>

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<sup>199</sup> Maduko, Franklin, Adanna Chukwuma, Gevorg Minasyan, Armineh Manookian, Noel Saldarriaga, Angel Miguel, and Ajay Tandon. (2021). "More Money for Health: Resource Mobilization for Universal Health Coverage in Armenia." Washington, DC: World Bank. <https://openknowledge.worldbank.org/handle/10986/36793>

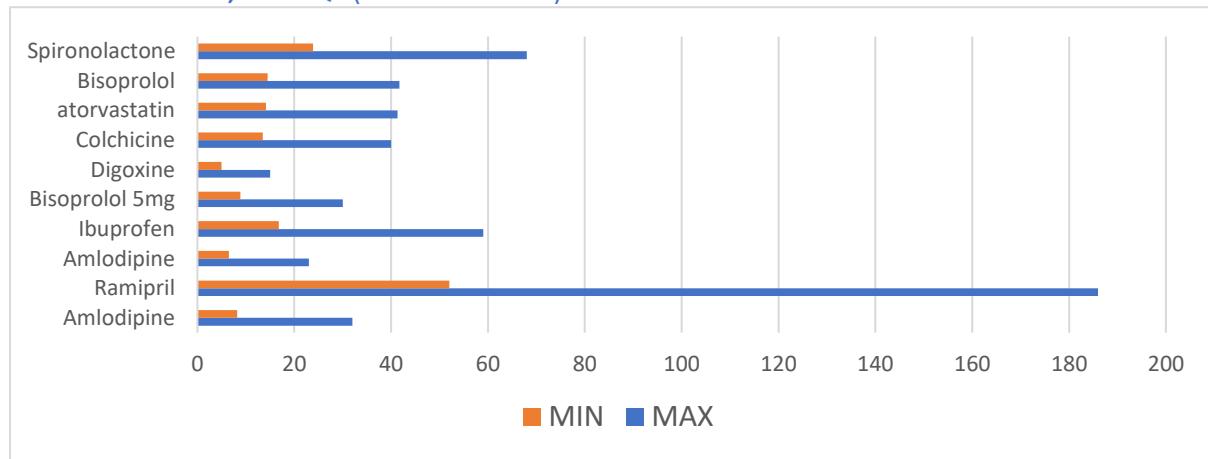
**Figure 84. Purchasing prices for inpatient and outpatient facilities in Armenia, 2022-Q4 (in nominal AMD)**

**84a: Hospitals**



Source: Market Performance Group (MPG). Forthcoming. "Pharmaceutical Market Assessment for Armenia: Public Expenditure Review." Washington, DC: World Bank.

**84b: PHC facilities, 2022-Q4 (in nominal AMD)**



Source: Market Performance Group (MPG). Forthcoming. "Pharmaceutical Market Assessment for Armenia: Public Expenditure Review." Washington, DC: World Bank.

**242. There are several tools the government could use to identify and address failures in the market for pharmaceuticals.** Important regulatory tools to consider include comparing prices for new products against those paid by other payers (external reference pricing, which may be limited by the lack of transparency on medicine prices); comparing prices for new products against similar products (internal reference pricing); health technology assessments that analyze the return on investment for new medications; promoting the use of generic alternatives to off-patent original medicines (see Box 11 for some examples); and provider prescribing budgets.<sup>200</sup> However, cost-containment objectives will need to be balanced with improvements in health services and support for pharmaceutical innovation.

<sup>200</sup> OECD. (2008). Pharmaceutical Pricing Policies in a Global Market. OECD Health Policy Studies.

<https://www.oecd.org/health/health-systems/41303903.pdf>

**Box 11. Pharmaceutical Industry Case Studies for Promoting Generic Alternatives**

**Case 1: Removing Trade Barriers Reduces Cost of Producing Medicines:** In 2017, Kenya introduced a policy that removed import duties on raw materials used to produce pharmaceuticals. This has helped to reduce the cost of producing medicines in the country and has led to increased availability of affordable generic drugs.

**Case 2: Bypassing Patents for Essential Medicines Leads to Lower Drug Prices:** In 2000, the Thai government implemented a policy that allowed it to bypass patent protections for certain essential medicines, including HIV/AIDS drugs. This enabled the country to import and produce generic versions of these drugs at lower prices, leading to cost savings and increased access to treatment.

**Case 3: Stricter Drug Patent Regulations Increase Access to Affordable Medicines:** In 2012, India implemented a policy that required companies seeking to register new drugs in the country to prove that they are significantly better than existing drugs in order to receive exclusive marketing rights. This policy helped to reduce the number of frivolous patent claims and has led to the development of more affordable generic versions of medicines.

**Case 4: Producing Generic HIV/AIDS Drugs Leads to Increased Treatment Access:** In 2005, Brazil began producing its own generic versions of HIV/AIDS drugs, which it distributed free of charge to patients through its public health system. This policy has helped to significantly increase access to treatment for people living with HIV/AIDS in Brazil.

**Case 5: Importing and Producing Generic Medicines Increases Access to Treatment:** In 1997, South Africa passed a law that allowed the government to import and produce generic versions of patented medicines in the interest of public health. This policy has helped to increase access to affordable medicines in the country, particularly for people living with HIV/AIDS.

Sources: World Health Organization (WHO) country profiles publications

## Section 4.5: Looking Forward: Introduction of Universal Health Insurance

**243. To counter the rising burden of NCDs, adapt to demographic changes, and address concerns about access to health care, Armenia is considering the introduction of Universal Health Insurance (UHI).** The 2021-2026 government program envisages the adoption of UHI in Armenia. A roadmap for this major reform was outlined in the Concept Note (CN) on Introduction of Universal Health Insurance and the 2023-2026 Health System Development Strategy of the Republic of Armenia adopted by the government in February 2023.<sup>201</sup><sup>202</sup> Key aspects of the proposed reform include mobilizing additional public financing for an expanded benefits package (as compared to the existing package) and establishing a single public purchaser to contract providers to supply this care. In addition, the government proposes implementing interventions to strengthen service delivery, including establishing a quality unit in the Ministry of Health (MoH), improved service monitoring, and investments in primary care infrastructure. The key governance and financing elements of the reform proposal as per the approved CN are highlighted in Box 12.

<sup>201</sup> Government decision No. N-133-L dated February 2, 2023

<sup>202</sup> Government decision No. N-174-L dated February 9, 2023

Box 12. Key elements of the reform proposals as per the approved Concept Note on Universal Health Insurance (UHI)

**UHI rollout is planned in three phases from 2023 to 2027, with an increase in coverage of population in each phase.** The first is a preparation phase in 2023, the second is a piloting phase during 2024-2026 during which the coverage of the UHI will be progressively extended, and the third phase is the completion of the rollout, which is expected to take place in 2027. In the first year of the piloting phase, the coverage of the UHI will include beneficiaries of the Family Benefit Package and socially vulnerable groups, the disabled, children under 18 years old, and beneficiaries of the state social package, covering a total of about 1.3 million citizens in 2024. In the second year of the piloting phase, the coverage of UHI is planned to be extended to citizens aged 63 and older as well as the rest of public sector employees (about 360,000 citizens). In the last year of the piloting phase, in 2026, coverage is planned to be extended to the entire employed population in the private sector (employees, self-employed and those employed in the agriculture sector). As a result, by the final phase of implementation of UHI (in 2027), at least 95 percent of the population is planned to be covered.

**While the details of the benefit package are still under discussion, the plan is that all citizens will benefit from the same benefit package by the end of the full implementation of UHI.** The details of the basic benefit package and minimum services are planned to be developed during the preparation phase (in 2023) and reviewed on an annual basis. During the implementation phase, the beneficiaries of UHI will utilize the basic benefit package services (which is currently being defined) while the minimum service package (mostly corresponding to the existing package) will be available for citizens not included in UHI. After full implementation of the UHI, all citizens covered by the UHI are expected to receive the same benefit services and medical coverage. In addition to the basic benefits and minimum service packages, the CN envisions a voluntary health insurance to be made available for all citizens (insured and uninsured under UHI), which will include services not covered by UHI.

**The CN outlines the establishment of a National Health Fund (NHF) that will operate as a single public payer.** According to the CN, the NHF will be established during the preparation phase and will absorb the SHA. The policy aim is to have the NHF act as a single public payer, which will specify a formula-based allocation for sufficient funding of the package. The Fund's functions will be established by law and the charter will be approved by government decision. The Fund is expected to have a Management Board, which will make key decisions. Two committees on strategic procurement and performance control are planned to operate as adjuncts to the Management Board, with the aim of improving the effectiveness of decision-making and to ensure participation and transparency.

**244. The introduction of universal health care will require significant financial resources at a time of constrained fiscal space.** The increased financing need for UHC is expected to be driven by several factors, notably: (i) a significant increase in coverage in terms of the population (from the de facto, 38 percent, as noted in Section 4.1, to at least 95 percent of the population by 2027) and in terms of services covered; and (ii) supporting investments in personnel, health infrastructure, and other inputs to ensure that quality of care is improved, particularly at the primary level. This increased financing need comes at a time of limited fiscal space. For example, as noted in the simulations in Chapter 1, Armenia will face challenges to comply with the fiscal rules in place, even with an increase in public health spending to bring spending in line with the UMIC average (from 1.7 percent as a share of GDP presently to 3.4 percent of GDP by 2026).

**245. Given this, it is critical that the UHC rollout is preceded by a clear understanding of cost implications and the financing plan.** Some of the prerequisites for a detailed and transparent costing of the reform include: (i) the specification of coverage of services in each phase, with transparent assumptions on the proposed coverage of services for each population group before and after the introduction of the reform; (ii) clarity over the cost of service provision and

assumptions regarding cost drivers in the medium to long term; and (iii) establishment of a mechanism to ensure that cost estimates are continuously updated and assessed as part of the annual budget process. Clarity over the financing of the reform is also critical since it is linked to clarity on the total financing requirements (derived from the costing). The appropriate share of financing envisioned through the budget and through premiums and contributions needs to be assessed in line with global experience. This in turn would need to be communicated in a transparent manner.

**246. Moreover, there is a need to identify actions to improve spending efficiency and to avoid scaling up existing inefficiencies.** A significant increase in public health spending will need to be accompanied by reforms to ensure efficiency by addressing the constraints identified in this chapter. This includes reforms on enforcing a reliance on primary health care and stricter screening for inpatient care and hospitalization, monitoring the process of referrals and prescriptions, setting up a system for strategic purchasing, and introducing measures to control pharmaceutical prices.

**247. Actions to control medicine prices will need to be accompanied by reforms to avoid overuse.** As part of the UHI, Armenia is planning to expand the benefits package to include essential medicines, which aims to subsidize household spending, reduce financial risk, and help contain pharmaceutical price growth.<sup>203</sup> However, this reform could also contribute to over-use of medicines by reducing the price elasticity of demand. This points to the need for additional complementary reforms to ensure rational, evidence-driven prescribing behavior and limits to cost-sharing (to a select list of essential medicines).

**248. It should be noted that the UHC rollout is a complex reform that will also require significant governance and service delivery reforms.** This includes the establishment and effective functioning of the NHF (Box 12), addressing service delivery constraints, additional inputs in terms of infrastructure and health workforce, and a robust health information system. These reforms are not discussed in depth in this report but are covered in complementary WB reports.<sup>204</sup>

#### Section 4.6: Conclusion and policy recommendations

**249. Armenia's health system is not geared towards addressing the health challenges arising from a growing burden on NCDs and an aging population, and the current financing structure raises equity concerns.** The health system is still hospital-centric, with under-utilization of primary health care, driven by concerns of cost and quality. Health financing is dominated by private out-of-pocket spending, which raises concerns about equity. Public health spending is at lower levels than among peers and is not efficiently allocated and spent. Key drivers of inequity arise from fragmentation, non-strategic purchasing, allocative inefficiency with spending skewed towards hospital care, and high pharmaceutical costs.

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<sup>203</sup> In terms of pharmaceutical markets, a UHC reform could confer significant purchasing power on a public single-payer, which is an entity that collects all health fees and pays for all public healthcare costs. This could in turn allow for imposition of price limits on suppliers for the medicines covered by reimbursement even if they are purchased over the counter, as is the case in the United States for Medicaid.

<sup>204</sup> World Bank (2020). "FinHealth Armenia: Reforming Public Financial Management to Improve Health Service Delivery." World Bank (2023, forthcoming). "Building Effective Primary Healthcare in Armenia."

**250. At the same time, Armenia is planning to undertake an ambitious reform towards universal health care, which is likely to have significant fiscal consequences.** This makes it critical that the reform rollout is preceded by a clear understanding of the operational details and a careful estimate of the cost of the reform, and its financing arrangements (Recommendation 1), and accompanied by reforms that address the constraints on spending efficiency that have been identified in this chapter. Notably, the analysis in this chapter highlights several reforms to improve the efficiency of public health spending. These include establishing an accountable and independent strategic purchaser (Recommendation 3), improving purchasing by instituting a transparent mechanism to govern the revision of the benefits package (Recommendation 4) and implementing payment reforms (Recommendation 5), and introducing pharmaceutical reforms to help control medicine prices (Recommendation 6). These recommendations are summarized in Table 21 and discussed in more detail below.

**Table 21: Summary of main recommendations for improving efficiency and equity of public health spending**

Issue	Policy Recommendation
<b>Recommendation 1: Ensure careful preparation of the universal health care reform to minimize the potential significant fiscal implications.</b>	
Key aspects of the planned UHC reform are not clear from the approved Concept Note and need clarification before proceeding with the reform since they will determine the fiscal implications of the reform.	<p>Ensure that the reform rollout is preceded by a clear understanding of the operational details and a careful estimate of the cost of the reform and its financing arrangements.</p> <p>Adopt parallel reforms to address the constraints on health spending efficiency that have been identified in this report.</p>
<b>Recommendation 2: Increase public, prepaid, and pooled financing for health</b>	
Armenia's health sector financing is dominated by OOP, which is inequitable, and is fragmented with different risk pools and multiple insurers for a subset of government workers.	<p>Adopt a gradual increase in the public health budget, in line with the available fiscal space.</p> <p>Consolidate state funding for services that cover the beneficiaries of the social package, the general population, and vulnerable and special groups.</p>
<b>Recommendation 3: Establish an independent and accountable agency empowered to undertake strategic purchasing decisions</b>	
The strategic purchasing function of the SHA has been eroded over time and it cannot initiate significant changes to resource allocations or deploy tailored purchasing mechanisms for different providers or services	Establish a single payer to purchase state-funded care with defined clear roles and responsibilities including the ability to tailor contracting mechanisms within subnational units and across providers. The agency should be independent of the MoH but remain accountable to the MoH, MoF, and other key

	stakeholders. The agency should be subject to audits and annual performance reporting
<b>Recommendation 4: Institute a mechanism to govern the revision of the benefits package</b>	
Following an initial design that was evidence-driven and inclusive, the BBP's scope has since been informed by political considerations rather than optimized to address population health goals	Put in place a system of technical assessments and comprehensive stakeholder consultations for revision of the benefits package, such that decisions include considerations for the burden of disease and financial risk protection which will improve allocative efficiency within the BBP.
<b>Recommendation 5: Reform payment systems to reward quality and PHC supply</b>	
The current payment mix, while output-based, does not incorporate explicit incentives for quality and does not adequately prioritize the provision of primary health care services	<p>Establish a mechanism for periodically reviewing the levels of reimbursement to ensure that they adequately reflect the cost of producing these services to promote the quality, increase primary care supply, rationalize the use of hospital care and reduce incentives for undersupply and balance billing.</p> <p>The design and implementation of payment reforms should be the responsibility of the single payer and will require investments in adapting the electronic health information system to support monitoring, reimbursement, and grievance redress.</p>
<b>Recommendation 6: Introduce pharmaceutical policies that reduce medicine prices</b>	
Pharmaceutical spending and medicine prices are high and indicative of market power and weak regulation	<p>Consider regulating the medicine market and the price growth by:</p> <ul style="list-style-type: none"> <li>a) Centralizing the procurement of commonly purchased medicines and medical supplies at the primary and hospital level. Improve the transparency of the market by proactively sharing information on suppliers and prices of specified products.</li> <li>b) Using external reference pricing, which will make the maximum price paid for medicines comparable to similar countries and health systems.</li> <li>c) Implementing prescribing budgets, such as a yearly cap on spending on medicines in the essential list.</li> </ul>

**Recommendation 1: Ensure careful preparation of the universal health care reform to minimize potentially significant fiscal implications**

**251. A successful implementation of the Universal Health Coverage reform requires a clear operational plan and detailed costing.** While the UHI CN defines the general concepts of the reform, many important components of the reform still need to be defined and agreed upon. Before embarking on the reform, it is essential that details of the reform, including coverage, benefit package, governance, costing, and financing of the reform are well thought out and planned. Meanwhile, a successful reform will require identifying and implementing actions to improve spending efficiency, as highlighted in this chapter. In parallel, Armenia will need to address infrastructure and health workforce gaps to improve service delivery in the new UHC system and be responsive to the increase in demand resulting from expanded insurance coverage. A robust health information system is also needed to track health sector performance.

**Recommendation 2: Increase public, prepaid, and pooled financing for health**

**252. Armenia should consider a gradual increase in public health spending together with merging of state funding of services to different population groups.** As noted in the chapter, the high share of OOP in health financing raises equity concerns, and the fragmentation of funding flows increases inefficiencies by preventing the pooling of risks and leads to information asymmetry. To address this challenge, Armenia should consider a gradual increase in public health funding in line with the available fiscal space. Additionally, to reduce fragmentation and encourage pooling, Armenia should consider merging state funding for services that cover the beneficiaries of the social package, the general population, and vulnerable and special groups.

**Recommendation 3: Establish an independent and accountable agency empowered to undertake strategic purchasing decisions**

**253. Armenia should consider establishing a single payer to purchase state-funded care on behalf of the covered population.** Based on the Armenian experience, global best practices, and population size, this is a widely adopted and functioning model. This purchasing model would reduce duplicative administrative costs and confer monopsony power that will exert downward pressure on prices. However, in the absence of competition and to ensure high performance, it would be important to define clear roles and responsibilities for the purchaser, which should include the ability to tailor contracting mechanisms within subnational units and across providers. The agency should be independent of the MoH given the latter's role in delivery, but through an advisory board remain accountable to the MoH, the MoF, and other key stakeholders, which may include physicians' associations, patients' associations, Parliament, and so on. The management of the agency should include key functions such as a chief executive, chief operating officer, chief financial officer, analytics and monitoring, claims, quality assurance, and so on. To avoid capture, their appointments should involve competitive selection and objective terms of reference. The agency should be subject to audits and annual performance reporting. These provisions or their adaptations should be encoded in law.

#### Recommendation 4: Institute a mechanism for governing the revision of the benefits package

**254. The revision of the benefits package should follow best global practices and be based on thorough technical assessments and comprehensive stakeholder consultations.** Broad consultations are particularly important because the limitations of fiscal space will necessarily yield winners and losers in terms of what services are covered, for whom, and to what extent. Furthermore, ensuring that decisions include considerations for the burden of disease and financial risk protection will improve allocative efficiency within the BBP. Hence, it will be important to specify what criteria will inform modifications to the package, the required analysis, and the designated institution with the mandate to undertake these analyses. An important consideration, considering the analysis in this chapter, will be to specify as part of the BBP design what care should be received at primary, secondary, or tertiary levels as a condition for reimbursement with a view to shifting services that can be managed at lower levels away from specialized care. The process for consultations should also be defined, including mechanisms for grievances to be received from key groups and considered, and final approval of benefits package changes may be delegated to a higher level than the MoH, potentially the government or Parliament. This process should be encoded in law to avoid capture by interested political entities.

#### Recommendation 5: Implement payment reforms that reward quality and PHC supply

**255. Payment incentives need to be continuously updated such that they reflect the importance of high-quality healthcare outcomes and adequately prioritize the provision of primary health care services.** To promote quality and reduce the incentive for hospital-centric care, it will be important to revisit the payment mix and levels of reimbursement. To this end, it will be critical to establish a mechanism for periodically reviewing the levels of reimbursement to ensure that they adequately reflect the cost of producing these services so as to reduce incentives for undersupply and balance billing. The current payment mix, while output-based, does not incorporate explicit incentives for quality. To this end, Armenia can draw on the experience of learning and iteratively adapting interventions through pilots and may consider leveraging global lessons in using performance-based payments, bundled payments, and population-based payments to promote improved quality of care, increase primary care supply, and rationalize the use of hospital care. The design and implementation of payment reforms should be the responsibility of the single payer and will require investments in adapting the electronic health information system to support monitoring, reimbursement, and grievance redress.

#### Recommendation 6: Introduce pharmaceutical policies that reduce medicine prices

**256. Implement effective, best-practice instruments to systematically decrease medicine prices in Armenia.** The important role medicines prices play in health spending necessitates reforms to regulate cost growth, particularly if the benefits package is to be expanded to further cover essential medicines for NCDs. To this end, the chapter analysis suggests the potential value of several options:

- **Centralizing the procurement of commonly purchased medicines and medical supplies at the primary and hospital level** may serve to improve quality (given the higher capacity for technical specifications at the central level) and reduce prices given the monopsony power of the single purchaser. There are several models to consider, such as proactively

sharing information on suppliers and prices of specified products, joint market research for facilities to coordinate purchases, joint negotiation of prices and framework agreements, and central contracts for procured items. The model used and its relative impact on prices will reflect considerations such as the type of medicines or medical supplies, capacity for technical specifications, transparency on pricing among suppliers, and the level of competition in the market. Centralizing procurement should be accompanied by improved procurement capacity at the SHA, greater transparency, and improvements in the audit of procurement. This is important to minimize misprocurement, delays, and negative implications in prices. These procurement reforms at the SHA are linked to the broader governance reforms for the proposed single payer highlighted in Recommendation 3.

- **Considering the higher prices in Armenia relative to neighboring countries, there may be a role for using external reference pricing** so that the maximum price paid for medicines is comparable to similar countries and health systems. Armenia could also revisit the VAT rate for medicines, which is higher than in peers, thus balancing revenue generation objectives with equity considerations.
- **At the facility level, Armenia could consider implementing prescribing budgets**, such as a yearly cap on spending on medicines in the essential list, with the incentive for savings to be retained by providers in addition to promoting generic prescribing for all medicines covered by the state.

## Annex 4.1: Details of Armenia's public health budget programs

**Armenia's health budget can be disaggregated into state targeted programs and associated, budgeted activities.** According to data available from the Ministry of Finance, Armenia had six state targeted programs for health in 2019, covering a range of health areas, including areas like primary health care, maternal and child health care, as well as hygienic and epidemic safety. These programs are designed to address specific health challenges faced by the Armenian population and were broken down into activities (Table 1), including reducing the burden of preventable diseases. These programs are further broken down into sub-programs so as to enable the prioritization and tracking implementation.

**Health expenditures also can be viewed from a geographic lens.** Healthcare expenditure in Armenia is influenced by a variety of factors, including the geographical distribution of the population. With approximately one-third of the country's population residing in the capital city of Yerevan, it is not surprising that a significant share of the community budget is allocated to Yerevan. In fact, according to available data from the Ministry of Territorial Administration and Development of the Republic of Armenia, the total expenditure of community budgets allocated to Yerevan in 2018 was higher than that of all other ten regions combined (Table 2). The same was observed for healthcare spending, including both administrative and capital costs. However, this concentration of healthcare expenditure in Yerevan highlights a potential disparity in healthcare investment across the country. For example, in three regions (Shirak, Syunik, and Vayots Dzor), no capital expenditures were recorded in the health sector, suggesting a lack of investment in critical health infrastructure in these regions. This discrepancy in health care expenditure and investment across different regions of Armenia may highlight the need for targeted policies and interventions to ensure that all citizens have access to adequate and quality healthcare services.

**Table 1. State targeted health programs in Armenia, by state budget program and activity, 2019**

TITLE OF PROGRAM	TITLE OF CORRESPONDING PROGRAM IN 2019 STATE BUDGET	TITLE OF CORRESPONDING ACTIVITY IN 2019 STATE BUDGET	BUDGETED AMOUNT (THOUSAND DRAM)
<b>2019 State Targeted Program for Provision of Primary Health Care for the Population</b>	Primary health care services	Ambulatory-polyclinic medical services	25,404,495.90
		Services for treatment of diseases requiring continuous monitoring and some specific diseases	133,000.00
		Screening of newborn children for early detection of congenital hypothyroidism, phenylketonuria, and hearing impairments	303,534.30
		Laboratory tests and instrumental examinations for verifying the diagnosis at specialized centers	233,126.40
		Primary dental prevention services for children	44,400
	Maternal and child health care	Screening and rehabilitation of children with mental, psychiatric (behavioral), hearing, physical (motion), and other disorders	307,283.90
		Providing medical care for noncommunicable diseases	2,484,755.30
	Infectious disease prevention program	Services of hemodialysis and peritoneal dialysis	262,101.60
	Medical care of socially vulnerable people and those included in special categories	Provision of dental care services	507,194.60
	Ambulance services	Ambulance services	3,292,270.00
<b>2019 State Targeted Program for Provision of Medical Care and Services for Individuals, Included in Socially Vulnerable and Other (Special) Categories of the Population</b>	Medical care of socially vulnerable people and those included in special categories	Medical care services for persons included in socially vulnerable and special groups	10,955,389.20
		Medical care services provided to military service persons, as well as rescue service persons and their family members	3,077,217.30
		Medical care and services for the staff of public institutions and organizations	3,826,300.00
		Medical care services for the victims of trafficking	2,000.00
		Provision of urgent medical aid and service (including medical devices, equipment, medication and auxiliary medical services)	100,000.00
	Providing medical care for noncommunicable diseases	Emergency medical care services	3,237,579.50
<b>2019 State Targeted Program for Medical Care and Services for Diseases That Have Social Dependence and Special Significance</b>	Providing medical care for noncommunicable diseases	Medical care services for psychiatric and addiction disorders	2,515,293.10
		Medical care services for oncological and hematologic diseases	1,917,301.40
		Medical care services for tuberculosis	1,021,223.10
	Infectious disease prevention program	Medical care services for intestinal and other infectious diseases	1,219,950.80

<b>2019 State Targeted Program for Provision of Maternal and Child Health Care</b>	Maternal and child health care	Obstetric medical services	6,953,818.50
		Services of medical care for gynecological diseases	366,976.70
		Pediatric medical care services	8,119,421.00
		Medical care services for infertile couples with use of auxiliary reproductive technologies	210,000.00
<b>2019 State Targeted Program for Provision of Hygienic and Anti-Epidemic Safety of the Population</b>	Protection of Public Health	Services of public health and provision of sanitary-epidemic security of the population	1,847,400.00
		Blood collection services (blood bank)	252,951.00
		National Immunoprevention Program	2,326,057.70
<b>Programs of adjacent services, supporting 2019 state target programs (not belonging to other categories)</b>	Protection of Public Health	Provision of medicine to persons receiving ambulatory-polyclinic, inpatient medical aid and to individuals included in special categories	2,600,003.00
		Customs clearance and distribution services for medicine and pharmaceutical products received as humanitarian aid	57,867.40
	Pathoanatomical, genetic and forensic medical examinations	Forensic and genetic services	399,905.30
		Pathoanatomical services	53,044.00
	Maternal and child health care	Services of providing orthosis and spinal assistants to disabled and poor children	51,136.00
	Protection of Public Health	Healthy lifestyle promotion and public awareness services	26,869.30
		State Program for Tobacco Control and Environment Protection	100,000.00
	Consulting, professional support and studies	Consulting, professional support and research	222,066.20
		Scientific-medical library services	43,564.90
		Delivery of medical services at health care institutions of the regions on Armenia, through temporary secondment of medical doctors	50,000.00
		Maintenance of the e-Health system	500,000.00
	Program for Modernization of Health System and Increasing Its Efficiency	World Bank supported non-communicable disease prevention and control program	1,084,522.00
		World Bank supported non-communicable disease prevention and control grant program	340,588.60
		Global Fund supported grant Program on "Strengthening of anti-tuberculosis measures in the Republic of Armenia"	862,732.30
		Global Fund grant project on "Support to the national program for combating HIV/AIDS in the Republic of Armenia"	898,860.50
		Program for "Improvement of the prevention and control of non-communicable diseases in primary health care level of health system" funded by the Eurasian Fund for Sustainability and Development of the Republic of Armenia	407,510.10

Source: Ministry of Finance of the Republic of Armenia; FinHealth Armenia Report (WB, 2020)

**Table 2. Community health budget expenditure in Armenia by Marz, AMD Thousand 2018**

MARZ (REGION)	TOTAL EXPENDITURES OF COMMUNITY BUDGETS		FROM WHICH HEALTH CARE					
			ADMINISTRATIVE COSTS		CAPITAL COSTS		TOTAL	
	ANNUAL ADJUSTED PLAN	ACTUAL	ANNUAL ADJUSTED PLAN	ACTUAL	ANNUAL ADJUSTED PLAN	ACTUAL	ANNUAL ADJUSTED PLAN	ACTUAL
Yerevan	85,527,436.7	62,808,839.2	43,400.0	42,915.0	220,000.0	129,118.5	263,400.0	172,033.5
Aragatsotn	4,873,270.5	3,988,293.2	400.0	100.0	3,300.0	0.0	3,700.0	100.0
Ararat	8,693,570.0	7,246,905.5	12,045.0	7,541.5	6,903.9	5,659.2	18,948.9	13,200.7
Armavir	8,217,461.2	6,352,705.5	3,848.0	2,882.8	10,659.4	0.0	14,507.4	2,882.8
Gegharkunik	7,785,212.3	6,499,431.4	980.0	180.0	36,000.0	990.0	36,980.0	1,170.0
Lori	7,735,798.7	6,624,956.3	3,270.0	2,160.0	3,330.0	3,238.5	6,600.0	5,398.5
Kotayk	9,133,678.8	7,700,348.0	6,054.0	3,773.7	300.0	0.0	6,354.0	3,773.7
Shirak	7,824,451.5	6,646,360.8	0.0	0.0	0.0	0.0	0.0	0.0
Syunik	6,112,483.3	5,081,682.9	0.0	0.0	0.0	0.0	0.0	0.0
Vayots Dzor	2,653,244.4	2,127,643.2	0.0	0.0	0.0	0.0	0.0	0.0
Tavush	3,875,477.3	3,289,780.4	516.8	446.8	0.0	0.0	516.8	446.8
<b>Total</b>	<b>152,432,084.7</b>	<b>118,366,946.4</b>	<b>70,513.8</b>	<b>59,999.8</b>	<b>280,493.3</b>	<b>139,006.2</b>	<b>351,007.1</b>	<b>199,006.1</b>
Total without Yerevan	66,904,648.0	55,558,107.2	27,113.8	17,084.8	60,493.3	9,887.7	87,607.1	26,972.6

Source: Ministry of Territorial Administration and Development of the Republic of Armenia; FinHealth Armenia Report (WB 2020)

## Annex 4.2: Social package of TPA system

**Table 1. Allocation of social package beneficiaries among the Insurers in 2022**

	Number of Beneficiaries	Total Premium (AMD)
Armenia Insurance	9,315	288,709,272
Ingo Armenia	32,219	1,133,473,889
Nairi Insurance	18,419	613,112,101
Reso	7,129	229,682,649
Rosgosstrakh–Armenia	33,417	1,118,335,228
SIL Insurance	14,495	500,819,246
<b>TOTAL</b>	<b>114,994</b>	<b>3,884,132,385</b>

Source: SHA

**Table 2. Reimbursed to providers and loss ratios by insurance companies, 2022**

TPAs (Insurance Companies)	Market Share (%)	Reimbursed to Providers (million AMD)	Loss Ratio (%)
Armenia Insurance	7.43	326.3	102%
Ingo Armenia	29.18	1135.9	103%
Nairi Insurance	15.79	559.5	89%
Reso	5.91	246.6	101%
Rosgosstrakh–Armenia	28.79	1037.6	91%
SIL Insurance	12.89	499.4	100%
<b>TOTAL</b>	<b>100.0</b>	<b>3,805.3</b>	

Source: SHA

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