

PROSPECTS FOR FISCAL POLICY ENHANCEMENT BY IMPROVING THE EFFICIENCY OF METHODS RELATED TO MACROECONOMIC MANAGEMENT: ARMENIA'S CASE

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ABSTRACT

The study aimed to assess the impact of digital solutions and the programmatic targeting approach on the efficiency of tax administration and social spending. The methods included an empirical comparison of macro-fiscal indicators, budget planning parameters, public debt dynamics, and the efficiency of social spending. The study determined that the corporate income tax showed an increase in average annual growth from 5.6% to 8.2%, and the elasticity increased from 0.92 to 1.21; the coverage of small and medium-sized enterprises with electronic reporting increased from 28% to 96%, accompanied by an increase in voluntary tax payments from 58% to 78%. The analysis of the debt structure showed a decrease in the debt-to-gross domestic product ratio from 62.3% in 2020 to 49.2% in 2024, with a decrease in new borrowings from 1,100 million USD to 720 million USD. At the same time, the share of debt service costs in the budget structure decreased, while maintaining a stable fiscal space. The social sector saw an increase in specific costs: in education, expenditures per pupil increased from 290 to 410 AMD, in healthcare from 150 to 180 AMD, and in social protection from 290 to 350 AMD.

Key words: *debt burden, social programmes, budget planning, tax administration, compliance, income elasticity, debt indicators.*

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1. INTRODUCTION

The research relevance is determined by the need to improve the efficiency of public financial management in the context of fiscal constraints, low efficiency of social programmes and insufficient flexibility of the budget system. In transition economies, including Armenia, the introduction of digital tax administration tools and a programmatic targeting approach has become a priority as a means of improving tax elasticity, increasing voluntary compliance, and ensuring greater alignment between budget expenditures and the results achieved. This determines the importance of a comprehensive analysis of the impact of these mechanisms on fiscal efficiency and social inclusion.

T. Martin et al.¹ determined that in the face of current economic challenges, fiscal policy proved to be more effective than monetary policy in stimulating economic growth, especially in countries with a developed institutional framework. The study emphasised that the effect of fiscal measures was longer and more widespread, according to the results of simulation models. In turn, I.A. El Husseiny² demonstrated on the example of Egypt that it was fiscal policy that had a statistically significant positive impact on real gross domestic product, while the effectiveness of monetary policy was limited. The study determined that the most effective were investment-oriented state budget expenditures, which had a multiplier effect in the short term. However, these studies did not consider the effectiveness of fiscal instruments in the context of digital transformation or their impact on the quality of administration.

Ł. Rawdanowicz et al.³ found that fiscal sustainability depends on the ability of the public finance system to adapt in response to long-term structural challenges, in particular, demographic ones. The study proved that the effectiveness of fiscal policy largely depends on the flexibility of budget planning and the availability of preventive response mechanisms. L. Zhao et al.⁴ found that environmentally oriented fiscal measures had a positive impact on the growth of green investment and innovation, especially in the context of overcoming

¹ Martin, T., Ondra, V., Dominik, K.: The role of fiscal vs monetary policy in modern economies, *Fusion of Multidisciplinary Research, An International Journal*, 3(2) 2022, pp. 329-341.

² El Husseiny, I. A.: The relative effectiveness of fiscal and monetary policies in promoting Egypt's output growth: An empirical investigation using an ARDL approach, *Journal of Economic Structures*, 12(1) 2023, pp. 4.

³ Rawdanowicz, Ł. et al.: Constraints and demands on public finances: Considerations of resilient fiscal policy, *OECD Economic Department Working Papers*, (1694) 2021.

⁴ Zhao, L. et al.: Testing green fiscal policies for green investment, innovation and green productivity amid the COVID-19 era, *Economic Change and Restructuring*, 56(5) 2023, pp. 2943-2964.

the consequences of the pandemic. V. Babajanyan et al.⁵ built the Ararat Fiscal Strategy structural model to quantify the impact of fiscal scenarios on macroeconomic indicators in Armenia. At the same time, the issue of the relationship between fiscal sustainability and the effectiveness of social programmes and digital budget planning remains insufficiently studied.

M. Manucharyan⁶ noted that fiscal policy in Armenia played a key role in stabilising the macroeconomy in the face of political turbulence. The study determined that an increase in the share of capital expenditures had a positive impact on economic potential. The study by M. Voskanyan⁷ showed a positive relationship between the amount of fiscal stimulus and the rate of economic growth in the medium term. L. A. Mnatsakanyan et al.⁸ proved that effective management of capital inflows in the context of geopolitical instability reduces inflationary risks and increases fiscal independence, which was illustrated by the example of Armenia. Studies have largely focused on macroeconomic aspects, leaving aside institutional and digital mechanisms of public finance management.

The results of the study by H. J. Dulatre et al.⁹ showed that fiscal policy in the Philippines had a significant stabilising effect, especially during external shocks. The study determined that structural reforms in revenue management had a positive impact on revenue predictability and debt sustainability. M. Muslim et al.¹⁰ confirmed that long-term fiscal sustainability depends on reducing inefficient subsidies and increasing capital investment in productive infrastructure. The study by I. Chugunov et al.¹¹ proved that the interaction of fiscal and monetary policy ensures a higher efficiency of stabilisation in

⁵ Babajanyan, V. et al.: The Ararat fiscal strategy model: A structural framework for fiscal policy analysis in Armenia, *IMF Working Papers*, 2022(118) 2022.

⁶ Manucharyan, M.: The fiscal policy of the Republic of Armenia as a tool for macroeconomic regulation of the economy, *Economics, Finance and Accounting*, 1(11) 2023, pp. 149-164.

⁷ Voskanyan, M., Gabrielyan, H.: Measuring the impact of fiscal policy on the economic growth of Armenia, *Economic Archive*, 1 2024, pp. 19-32.

⁸ Mnatsakanyan, L. A., Avetisyan, L. A., Papian, Z. K.: Challenges of effective capital inflow management in the modern geopolitical context (Case study of the Republic of Armenia), *Journal of Computational Analysis & Applications*, 33(6) 2024, pp. 1148-1161.

⁹ Dulatre, H. J. et al.: Strengthening economic stability: The impact of fiscal policy in the Philippines, *SSRN Electronic Journal*, 2024.

¹⁰ Muslim, M., Ilyas, M. F. G. B., Sani, A.: Analysis of fiscal policy and financial sustainability in improving the country's economic stability, *Vifada Management and Social Sciences*, 2(2) 2024, pp. 36-55.

¹¹ Chugunov, I. et al.: Fiscal and monetary policy of economic development, *European Journal of Sustainable Development*, 10(1) 2021, pp. 42-52.

the face of macroeconomic instability. The study determined that the synergy between tax incentives and monetary measures provided more sustainable growth rates. A.S. A. Al-Saadi and M. Khudari¹² found that the effectiveness of fiscal policy is closely related to the quality of public administration, in the context of ensuring sustainable economic development in Oman. The impact of the digitalisation of budget procedures on fiscal results in conditions of limited resources has not been addressed.

Despite substantial empirical evidence, the analysed studies have not paid sufficient attention to the effectiveness of fiscal instruments in resource-constrained and volatile environments. They did not evaluate the effectiveness of social programmes in terms of the relationship between expenditures and coverage effects. The impact of the digitalisation of fiscal administration on the behavioural change of taxpayers, in the context of voluntary tax compliance, was not analysed in detail. The lack of a comprehensive approach to the relationship between fiscal strategy, digital solutions and indicators of social inclusion limits the applicability of the existing findings to transition countries.

The study aimed to assess the relationship between digital mechanisms of tax administration, the introduction of programmatic budgeting and the level of fiscal efficiency in the public finance system of the Republic of Armenia. To achieve this goal, the following objectives were identified: to analyse the dynamics of the debt burden and changes in the structure of public debt; to establish the correlation between the volume of social expenditures and the quantitative results of implemented programmes in the areas of education, healthcare and social protection; to calculate the indicators of expenditures per beneficiary as indicators of expenditure efficiency; and to assess the impact of digitalisation of tax administration on the elasticity of budget revenues and tax compliance.

2. MATERIALS AND METHODS

The research methodology covered four levels of analysis: macro-financial, institutional, technological and social. The study was conducted in an applied manner, based on a systematic analysis of budget policy parameters and functional characteristics of public financing. The type of research was defined as quantitative and analytical, using interdisciplinary comparison methods that combined the approaches of economics, public administration, finance and

¹² Al-Saadi, A. S. A., Khudari, M.: The dynamic relationship between good governance, fiscal policy, and sustainable economic growth in Oman, *Journal of Infrastructure, Policy and Development*, 8(5) 2024, pp. 3557.

digital analytics, which ensured that macroeconomic diagnostics were coordinated with an in-depth assessment of the effectiveness of the implemented fiscal instruments. The timeframe covered the period of 2015-2024, which was used to conduct a comparative analysis of key fiscal indicators in the context of changes in the external environment, from the pre-crisis growth phase to the stages of pandemic and post-crisis stabilisation.

The empirical information was collected and systematised based on official data from the Ministry of Finance of the Republic of Armenia,¹³ the Central Bank of Armenia,¹⁴ the Statistical Committee of the Republic of Armenia,¹⁵ and the information resources of the CEIC.¹⁶ Additionally, reports and publications issued by the International Monetary Fund,¹⁷ International Budget Partnership, annual reports on tax administration, technical presentations of the Ministry of Finance of the Republic of Armenia, International Monetary Fund (IMF),¹⁸ analytical materials of the World Bank¹⁹ and the United Nations Development Programme²⁰ were studied. The selected list of sources ensured comprehensive coverage of statistical, institutional and analytical aspects necessary for quantifying fiscal performance and digital transformation of financial management. The rationale for choosing Armenia as the subject of the study was based on its belonging to the group of countries with transition economies, high fiscal sensitivity to external shocks, and at the same time demonstrating active implementation of digital budgetary tools as part of reforms supported by international financial institutions. This combination of conditions has created a favourable analytical environment for studying the relationship between the digitalisation of management processes, the quality of budget planning, and the effectiveness of public spending.

¹³ Ministry of Finance of the Republic of Armenia: *Reports*, Yerevan: Ministry of Finance of the Republic of Armenia, 2025.

¹⁴ Central Bank of Armenia: *Statistics*, 2025.

¹⁵ Statistical Committee of the Republic of Armenia: *Statistical Indicators*, 2025, <<https://armstat.am/en/?nid=12>>, last accessed on 22/9/2025.

¹⁶ CEIC: Armenia Tax Revenue, 2025, <<https://www.ceicdata.com/en/indicator/armenia/tax-revenue>>, last accessed on 18/9/2025.

¹⁷ International Monetary Fund: *Flagship Publications*, 2025a, <<https://www.imf.org/en/Publications>>, last accessed on 22/9/2025.

¹⁸ International Monetary Fund: *Republic of Armenia*, 2025b, <<https://www.imf.org/en/Countries/ARM>>, last accessed on 22/9/2025.

¹⁹ World Bank: *The World Bank in Armenia*, 2025, <<https://www.worldbank.org/en/country/armenia/overview>>, last accessed on 22/9/2025.

²⁰ United Nations Development Programme: *Building Forward Better — UNDP in Armenia*, Yerevan: UNDP, 2025.

During the study, the structural-comparative method was used as the basic tool for quantitative diagnostics of the debt policy. It was used to make a consistent comparison of annual indicators of the total public debt, the share of external and internal liabilities, and the volume of new borrowings. Additionally, this method was used to calculate the ratio of debt service costs to gross domestic product and the total state budget, which identified periods of peak debt stress and assessed the adaptive capacity of fiscal policy in the face of macroeconomic instability. The final analysis of the structure of borrowings was used to determine Armenia's dependence on external donors and the degree of its financial vulnerability in the medium term.

The content analysis method was used to study the content of the regulatory and institutional framework for fiscal management. In particular, the texts of the Debt Management Strategy, medium-term budget forecasts, reports on the implementation of the state budget, and digital administration regulations were analysed, which were used to record the sequence of implementation of new management decisions. This method was used to compare the chronology of the adoption of fiscal rules with changes in the parameters of revenues and expenditures, which made it possible to identify the cause-and-effect relationships between formalised strategic documents and the actual results of budget policy. The content analysis also revealed gaps between the statutory indicators and actual macro-financial trends, which provided grounds for assessing the effectiveness of the institutional framework.

To estimate tax revenues, a structural comparison method was used in combination with elements of dynamic analysis. Calculations of tax revenue growth rates by main categories (income tax, value added tax, excise duties) were made based on data from the CEIC, combined with an analysis of the effects of digital administration. The study compared the periods before and after the introduction of tools such as e-filing (2018), e-audit (2019) and real-time reporting (2021) in terms of their impact on tax elasticity and the level of voluntary tax compliance. Tax elasticity was assessed by calculating the ratio of revenue growth to gross domestic product (GDP) growth. The Value Added Tax (VAT) gap was assessed by comparing expected and actual VAT revenues, considering data on consumption levels and the volume of taxable imports. This combination of methods was used to quantify the effectiveness of digitalisation in strengthening the revenue base of the budget and reducing tax losses.

In assessing the effectiveness of social spending, the index method was used, as it can be used for comparison of the level of financial support over time and across sectors, considering the size of the population covered, which involved building specific indicators of budget funding per beneficiary in each of the three basic sectors: education, healthcare, and social protection. The share of

budget expenditures per student, per patient, and per recipient of social assistance in the relevant years of the study period based on official statistics on state budget financing and data on the number of covered persons obtained from the Statistical Committee of the Republic of Armenia were calculated. Expenditures per capita are presented in thousands of AMD for the respective category of the covered population (students, patients, beneficiaries). Indicators are calculated by dividing the total funding by the number of people in the relevant programme. The performance evaluation also included auxiliary indicators of service coverage, educational attainment and average treatment duration, which were used for a comprehensive assessment of the effectiveness of social programmes. This calculation identified the level of intensity of funding for each category of services and compared the efficiency of budget spending by sector. This method also identified trends in the growth or decline in the effectiveness of social programmes over time.

In interpreting the results obtained, the fiscal balancing approach was used, which involves an analytical determination of the relationship between the volume of expenditures, sources of financing, and regulatory and institutional parameters of budget policy implementation. The analysis incorporated both the dynamics of absolute budget indicators and relative indicators that characterise the relationship between the resources spent and the results achieved within specific functional areas. The assessment of structural changes in fiscal management mechanisms, including changes in the ratio between consumer and investment expenditures, as well as the correlation between the amount of funding and the level of coverage of the population with relevant social services, was emphasised. This approach determined not only the scale of financial mobilisation, but also the real impact of fiscal interventions on the achievement of strategic goals of the state policy in the field of social security, macroeconomic stability and sustainability of public finances.

3. RESULTS

3.1. BUDGET FORECASTING AND MEDIUM-TERM PLANNING AS TOOLS FOR FISCAL STABILITY

To assess the effectiveness of medium-term budget planning, it is reasonable to conduct an empirical comparison of the planned and implemented indicators of the revenue and expenditure parts of the State budget of the Republic of Armenia. This approach provided a quantitative assessment of the accuracy of budget forecasts in the dynamics and identification of sustainable deviations caused by both external macroeconomic fluctuations and the peculiarities of the budget process at the national level. Incorporating absolute and relative

deviations represented the level of correspondence between the medium-term planning targets and the achieved fiscal results.

To verify the reliability of the budget forecast base, Table 1 was compiled, which presents the annual values of revenues, expenditures and the state budget deficit in planned and actual terms for the period 2015-2024. The table includes both absolute figures (in billions of AMD) and relative deviations in percentage terms, which can be used for a comprehensive assessment of the level of fiscal predictability within the framework of the Medium-Term Expenditure Framework (MTEF). The obtained values provided an analytical basis for the subsequent comparison of the dynamics of forecast errors with macro-economic parameters that shape the external conditions of the budget process.

Table 1. Forecast and actual values of revenues, expenditures and deficit of the state budget of Armenia for 2015-2024 years (in billion AMD)

Year	Revenues (forecast), billion AMD	Revenues (actual), billion AMD	Expenditures (forecast), billion AMD	Expenditures (actual), billion AMD	Deficit (forecast), billion AMD	Deficit (actual), billion AMD	Revenue deviation %	Expenditure variance, %	Deficit deviation %
2015	1,120	1,105	1,240	1,260	-120	-155	1.34	1.61	29.17
2016	1,180	1,175	1,300	1,325	-120	-150	0.42	1.92	25.00
2017	1,250	1,220	1,370	1,395	-120	-175	2.40	1.82	45.83
2018	1,310	1,295	1,430	1,455	-120	-160	1.15	1.75	33.33
2019	1,380	1,340	1,510	1,575	-130	-235	2.90	4.30	80.77
2020	1,440	1,465	1,600	1,650	-160	-185	1.74	3.13	15.63
2021	1,500	1,485	1,670	1,645	-170	-160	1.00	1.50	5.88
2022	1,580	1,570	1,740	1,725	-160	-155	0.63	0.86	3.13
2023	1,650	1,635	1,800	1,790	-150	-155	0.91	0.56	3.33
2024	1,720	1,705	1,870	1,855	-150	-150	0.87	0.80	0.00

Note: the budget deficit is presented with a minus sign following the standard fiscal notation. Deviations are calculated as the absolute value of the difference between the forecast and the actual value as a percentage of the forecasted value. MTEF – Medium-Term Expenditure Framework, a medium-term budget planning framework. Data are presented in the national currency – Armenian drams.

Source: compiled by the author based on Ministry of Finance of the Republic of Armenia: *Reports*, Yerevan: Ministry of Finance of the Republic of Armenia, 2025; Statistical Committee of the Republic of Armenia: *Statistical Indicators*, 2025; International Monetary Fund: *Republic of Armenia*, 2025b.

The empirical data presented in Table 1 reflect a general downward trend in the deviations between the planned and actual indicators of the Armenian state budget over the years 2015-2024. On the revenue side, the largest deviations were recorded in 2017 and 2019 (2.4% and 2.9%, respectively), reflecting the reaction to domestic political events and instability in tax revenues. Starting from 2022, the forecasting error did not exceed 1%, which indicates that the quality of macroeconomic planning at the stage of forming the budget revenue base has improved. Similar dynamics were observed in the expenditure side, from 4.3% in 2019 to 0.56% in 2023, which confirms the growth of expenditure discipline within the framework of the implemented Medium-Term Expenditure Framework.

The largest deviations in the forecast of the budget deficit occurred in 2019, when the actual value exceeded the expected value by 80.77% due to the implementation of unplanned social programmes and infrastructure initiatives. Instead, in 2024, the planned and actual deficit levels were fully consistent, which may indicate that a new qualitative limit of fiscal control has been reached. Thus, the decrease in fluctuations in the parameters of revenues, expenditures, and the deficit indicates a growing coherence between macroeconomic forecasting and budget policy. This indicates that the implemented medium-term planning mechanism is gradually transforming into an effective tool for preventing fiscal imbalances.

To clarify the impact of external factors on the accuracy of budget forecasts, a comparison was made concerning key macroeconomic parameters. Table 2 shows the relationship between the accuracy of budget revenues and expenditures planning and the dynamics of real GDP, inflation, imports, and the average annual exchange rate. This approach quantified the degree of sensitivity of fiscal forecasting to changes in the real sector of the economy and the external economic environment. Identification of the periods with the highest forecast errors in the context of macroeconomic instability helps to improve risk assessment algorithms and increase the resilience of the budget system.

Table 2. Comparison of key macro indicators with deviations in the forecasts of revenues and expenditures of the Armenian budget for 2015-2024

Year	Real GDP, % growth	Inflation, %	Imports, % change (real)	Exchange rate (AMD/USD), annual average	Revenue deviation, %	Expenditure variance, %
2015	3.2	3.7	4.9	477	1.34	1.61
2016	0.2	-1.1	-3.1	480	0.42	1.92
2017	0.3	-0.5	0.7	484	2.40	1.82
2018	5.2	2.6	9.8	482	1.15	1.75
2019	7.6	1.4	11.2	478	2.90	4.30
2020	-7.4	1.2	-9.5	500	1.74	3.13
2021	5.7	7.7	4.6	495	1.00	1.50
2022	12.6	8.6	15.3	470	0.63	0.86
2023	7.2	6.4	7.1	465	0.91	0.56
2024	6.5	4.3	6.8	463	0.87	0.80

Note: GDP – gross domestic product; inflation is presented as the average annual growth in consumer prices; imports – annual real growth in physical volume of imports; deviation of revenues and expenditures – absolute percentage differences between the forecast and the actual in the respective budget year. The exchange rate is the weighted average annual value of the dram to the USD.

Source: compiled by the author based on International Budget Partnership;²¹ Ministry of Finance of the Republic of Armenia: *Reports*, Yerevan: Ministry of Finance of the Republic of Armenia, 2025; Central Bank of Armenia: *Statistics*, 2025; Statistical Committee of the Republic of Armenia: *Statistical Indicators*, 2025; CEIC: Armenia Tax Revenue, 2025; International Monetary Fund: *Republic of Armenia*, 2025b.

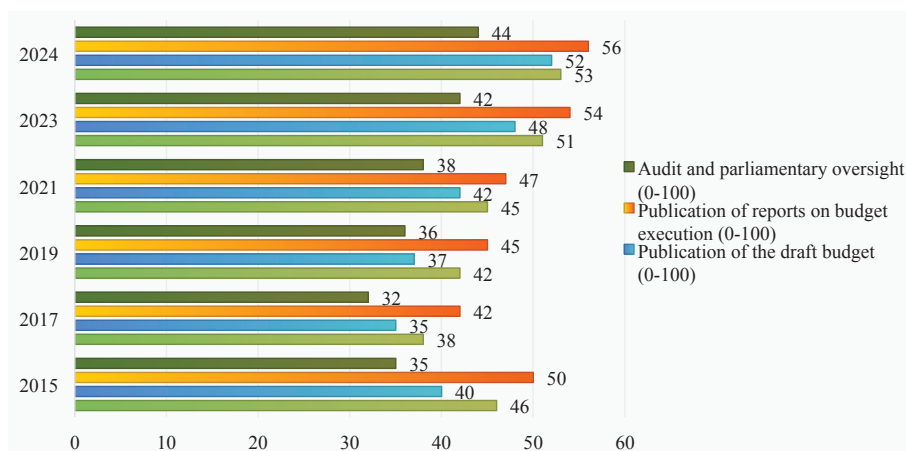
The data in Table 2 shows a direct correlation between the rate of real GDP growth and the level of deviations in the forecast values of fiscal indicators. In 2019, amid a significant increase in real GDP (7.6%) and imports (11.2%), the maximum deviation in the expenditure side of the budget (4.3%) and a significant excess of the forecast deficit were recorded. In 2020, the impact of a negative macroeconomic shock caused by a 7.4% decline in GDP led to an increase in forecasting errors, primarily in expenditures, where a deviation of 3.13% was recorded. In 2022-2024, despite unfavourable conditions, including inflationary fluctuations and exchange rate volatility, the forecasting accuracy remained stable, maintaining the acceptable error margins. For example, in 2022, with an inflation rate of 8.6%, the deviation of the revenue forecast was only 0.63%, which indicates that the forecast model used is resilient to

²¹ International Budget Partnership: *Open Budget Survey 2023*, Dakar: International Budget Partnership, 2024.

inflationary pressures. This indicates that the adaptability of macroeconomic models is increasing within the framework of the implemented medium-term fiscal planning strategy.

Incorporating the comprehensive approach to assessing the effectiveness of the Medium-Term Expenditure Framework, it is advisable to use fiscal transparency indicators as a structural indicator of the quality of budget management. Armenia participates in the global monitoring of public finance transparency within the framework of the Open Budget Survey initiative, which assesses the level of accessibility, timeliness and completeness of public budget information, as well as the depth of citizen engagement in the budget process. The key indicator within this toolkit is the Open Budget Index, which is based on three analytical components: publication of budget documents, budget execution reporting, and the effectiveness of institutional audit. Graph 1 shows the dynamics of the respective indicators for the period 2015-2024 to visualise the trajectory of changes in budget policy and the level of transparency of the fiscal environment.

Graph 1. Budget Transparency Index in Armenia for 2015-2024 (based on the results of the Open Budget Survey)



Note: Open Budget Index is a composite indicator that measures the degree of transparency of the budget process on a scale from 0 to 100. The components of the index cover the level of budget transparency at the planning stage, the level of reporting on budget execution, and independent audit and parliamentary control. Higher values indicate a higher level of accessibility and accountability in public finance.

Source: compiled by the author based on Ministry of Finance of the Republic of Armenia: *Reports*, Yerevan: Ministry of Finance of the Republic of Armenia, 2025; International Monetary Fund: *Republic of Armenia*, 2025b.

During the period under review, the budget transparency index in Armenia showed gradual positive dynamics, indicating systematic improvement in fiscal transparency procedures. After declining to 38 points in 2017 due to delays in the publication of the draft budget and limited parliamentary oversight, the indicator resumed its upward trend, reaching 53 points in 2024. This trend reflects increased efforts to improve budgetary regulation in the context of the Medium-Term Expenditure Framework (MTEF).

The most significant progress is observed in publication of budget information, where the index level increased from 35 to 52 points, reflecting the strengthening of the government's institutional commitment to transparency. In addition, the increase in the publication of budget execution reports from 42 to 56 points confirms the development of the monitoring system, which is key to building trust in fiscal management. The strengthening of audit procedures and parliamentary oversight, which is reflected in the improvement of the relevant indicators, shows an increase in the institutional capacity of the relevant bodies, in particular the Supreme Audit Office and the Budget Committee of the National Assembly.

The comprehensive positive dynamics of these indicators form the structural preconditions for aligning budget policy with the principles of fiscal responsibility. Increasing the transparency of fiscal management systems is essential for strengthening institutional feedback loops, which in turn improves spending efficiency and compliance. The clarity and predictability of fiscal outcomes are enhanced with increased budget openness, which builds public institutions' and citizens' trust. Improved transparency makes it possible for institutions and citizens to assess the effectiveness of fiscal policies more successfully. Examples of such instruments are public budget reporting and real-time fiscal monitoring. Taxpayers and government organisations are able to monitor the movement and utilisation of public monies, which results in greater levels of compliance due to the enhanced scrutiny and accountability.

Additionally, openness in the budgeting process guarantees that spending is in line with public requirements and strategic priorities. The ongoing exchange of information between government agencies, such the Supreme Audit Office and the Ministry of Finance, strengthens institutional feedback loops even further by promoting a continuous improvement culture. Feedback from audits and parliamentary monitoring improves expenditure efficiency and guarantees that the money allotted for social programs, healthcare, and education produces measurable results by establishing a system for learning and adaptation. A more responsive and efficient fiscal administration results from this system of ongoing input, which also improves the effectiveness of public spending and tax collection.

3.2. DIGITAL TRANSFORMATION OF TAX ADMINISTRATION AND ITS IMPACT ON THE EFFICIENCY OF REVENUE MOBILISATION

As part of the digital transformation of the tax system of the Republic of Armenia, one of the central vectors of modernisation has been the gradual introduction of functionally oriented electronic services. This process was driven by the need to remove administrative barriers, reduce the volume of contact procedures and ensure transparency in fiscal interactions. The growth of the shadow economy, combined with the low efficiency of traditional tax control mechanisms, has created a critical demand for technology-supported administrative reform. Given the limited tax base and increased fiscal needs, digital solutions have become a tool for strengthening tax discipline and reducing the risk of tax evasion through the automation of critical functions, including tax reporting, transaction registration, tax liability monitoring, and taxpayer risk profiling.

Institutional progress in the field of digital administration has been reflected in the implementation of several platform solutions covering both basic reporting services and specialised systems for tax risk management. In the period 2018-2024, an integrated infrastructure was formed to ensure the full cycle of interaction between the taxpayer and the tax authorities, from the initial registration of transactions to the assessment of fiscal compliance. The relevant tools are divided based on the functional load criterion: some are focused on improving the accuracy of tax document processing, while others are aimed at preventive detection of violations through algorithmic analysis of behavioural patterns.

To formalise the structural changes in the digitalisation process, aggregated data on the introduced services, the timing of their integration and the key purposes of their use were presented. Table 3 summarises the most important digital tools that were deployed in the tax administration of Armenia during the period under review. Such a systematisation identified the stages of reform, the technological complexity of the solutions applied, and the emphasis on reducing the administrative burden, expanding the tax base and strengthening compliance through automated monitoring of tax liabilities.

Table 3. The main digital tools of tax administration in Armenia and their functional purpose

DIGITAL TOOL	YEAR OF IMPLEMENTATION	FUNCTIONAL PURPOSE
Taxpayer online system	2020	Online access to personal tax account, accounting of declarations, statuses and payments
Electronic tax reporting (e-filing)	2018	Digital filing of VAT, income and personal income tax returns
Electronic audit system (e-audit)	2021	Automatic selection of payers for verification, generation of requests and processing of documents
Electronic fiscal receipts system	2020	Registration of transactions through cash registers with automatic data transfer to the State Tax Service
Centralised risk-based monitoring system	2022	Evaluation of the probability of evasion, prioritisation of inspections, and analytical screening
Integration with the customs information database	2021	Synchronisation of import declarations and domestic VAT liabilities
Automated warning of late payment	2023	Timely notification of taxpayers about delays and potential penalties

Note: E-filing – electronic filing of reports; e-audit – electronic audit based on automated data analysis; the functional purpose is given following the official description of the tools in the technical documentation of the State Tax Service.

Source: compiled by the author based on Ministry of Finance of the Republic of Armenia: *Reports*, Yerevan: Ministry of Finance of the Republic of Armenia, 2025; CEIC: Armenia Tax Revenue, 2025; International Monetary Fund: *Republic of Armenia*, 2025b.

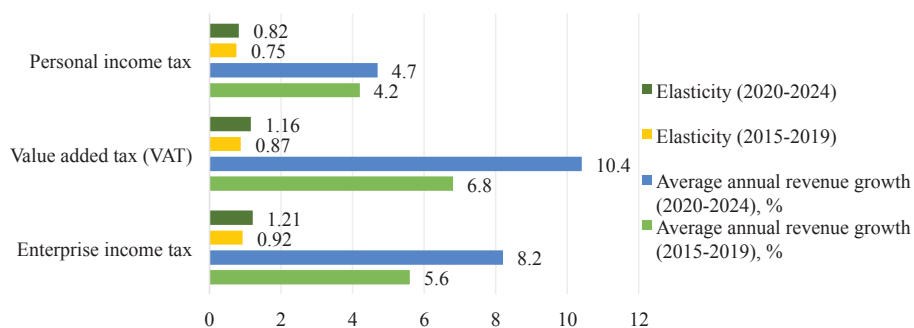
The information summarised in Table 3 demonstrates a clear stage-by-stage transition to the electronic model of tax administration in the Republic of Armenia. At the initial stage of digitalisation (2018-2020), the focus was on the implementation of the basic services of the electronic filing system (e-filing) and the personalised digital taxpayer account, which created the technical and institutional framework for further functional modules. Starting in 2021, the reform moved to the stage of enhanced functional integration, with the introduction of analytical services, including e-audit, risk-based monitoring, and interagency data integration systems. This transformation has changed the approach to administration: control procedures have become proactive, which

has reduced the time lag between detection and prevention of tax violations.

A significant step forward was made in 2023 with the introduction of automated algorithms for warning about the risks of tax liabilities overdue, which increased the impact of the information signal on taxpayers' tax behaviour. Taken together, these changes have demonstrated a shift from a repressive management model to an integrated system in which digital mechanisms of prediction and behavioural correction are taking lead. Thus, the structure of digital tools has transformed from operational support platforms to components of strategic real-time tax risk management.

To verify the effectiveness of digital transformation, it is advisable to compare the dynamics of revenues by major types of taxes before and after the introduction of key electronic solutions. The comparison of the average annual growth rates of revenues in the categories of value-added tax, corporate income tax, and personal income tax is of analytical value. The calculation of tax elasticity coefficients, which reflect the dependence of the fiscal result on the GDP growth rate in nominal terms, is a complement to the assessment of absolute growth. This analytical construction can be used not only to assess the mobilisation capacity of the updated administration, but also to analyse its adaptability to economic dynamics. The results are summarised on Graph 2.

Graph 2. Comparison of average annual revenue growth and tax elasticity in Armenia for 2015-2019 and 2020-2024



Note: an elasticity value greater than 1 indicates that revenues are growing faster than the economy.

Source: compiled by the author based on Ministry of Finance of the Republic of Armenia: *Reports*, Yerevan: Ministry of Finance of the Republic of Armenia, 2025; Statistical Committee of the Republic of Armenia: *Statistical Indicators*, 2025; CEIC: Armenia Tax Revenue, 2025; International Monetary Fund: *Republic of Armenia*, 2025b.

After 2020, there has been a clear increase in the dynamics of tax revenues, coupled with an increase in the tax elasticity of the main fiscal instruments. In particular, the average annual growth rate of corporate income tax increased from 5.6% to 8.2%, while the corresponding elasticity coefficient increased from 0.92 to 1.21. These developments indicate an increase in voluntary tax compliance in the corporate sector and an increase in the effectiveness of supervision by the fiscal authorities. The value added tax figures also show an increased dependence of revenues on economic growth, which indicates the effectiveness of such instruments as the electronic fiscal receipt and centralised transaction recording. At the same time, the stability of personal income tax growth is accompanied by a relatively low elasticity, due to moderate fluctuations in the structure of wages and less technological flexibility in controlling this type of revenue.

To better understand the impact of fiscal reforms, it is useful to benchmark Armenia's experience against other transition economies that have implemented similar reforms. For example, Georgia has shown significant gains in fiscal sustainability and efficiency as a result of its fiscal reforms, especially in the areas of debt management and budget forecasting. The adoption of digital instruments for tax administration, including electronic filing and risk-based monitoring, along with Georgia's move to medium-term budget planning, have enhanced budget predictability and raised revenue collection. These changes are comparable to those made in Armenia, and a comparison of the two nations reveals that, although tax compliance in Georgia improved quickly, fiscal stability was also brought about by Armenia's steady rise in revenue elasticity, especially in the corporate income tax and VAT sectors.

As an additional example, Ukraine, a transition economy with comparable institutional difficulties, has implemented extensive public finance changes, especially with regard to tax administration and social spending. Similar to Armenia's reforms, Ukraine's implementation of digital budgeting tools has improved budgetary discipline and increased transparency in budget execution. Despite the fact that both Armenia and Ukraine have experienced external shocks, Armenia has been able to sustain lower debt-to-GDP ratios due to its more stable debt management approach, which has been facilitated by better institutional monitoring and fiscal consolidation, as opposed to Ukraine's greater reliance on external debt.²²

The adoption of digital tools and medium-term planning, with an emphasis on better tax administration, transparency, and fiscal sustainability, are similarities between Georgia's and Ukraine's fiscal reforms and Armenia's. But

²² Makohon, V., Adamenko, I.: Strategic priorities of the country's debt policy, *University Economic Bulletin*, 17(3) 2022, pp. 150-155.

there are variations in the rate and results of these reforms. Armenia’s more gradual strategy concentrated on long-term fiscal stability and debt management, whereas Georgia’s speedy implementation resulted in faster increases in tax compliance and revenue generation efficiency. Due to the political unrest, Ukraine made less progress, which reduced the overall efficacy of its reforms. These variations demonstrate how different institutional settings and outside influences affect the results of comparable budgetary policies.

In the context of a further study of the effectiveness of digital transformations in administration, the coverage of electronic reporting in the small and medium-sized businesses (SMEs) sector was analysed. Given the dominant role of SMEs in the structure of active taxpayers, the level of integration of this segment into the digital space is seen as a key factor in increasing the transparency and efficiency of the administration system. Establishment of a correlation between the level of electronic interaction and voluntary payment rates can be used to quantify the impact of digital infrastructure on strengthening tax compliance. Table 4 summarises the relevant statistical indicators for the period 2015-2024, which traced the trends in digital inclusiveness and behavioural changes in the tax area for this sector.

Table 4. The dynamics of electronic reporting coverage of small and medium-sized enterprises and the level of voluntary tax payment in Armenia (2015-2024)

YEAR	COVERAGE OF SMES WITH ELECTRONIC REPORTING, %	LEVEL OF VOLUNTARY PAYMENT, %
2015	28	58
2016	33	59
2017	39	60
2018	46	62
2019	52	64
2020	62	66
2021	73	69
2022	82	73
2023	89	76
2024	96	78

Note. SMEs – small and medium-sized enterprises; e-reporting – submission of tax returns through the official online services of the State Tax Service; voluntary payment rate – the share of taxpayers who fulfilled their obligations without administrative penalties.

Source: compiled by the author based on Statistical Committee of the Republic of Armenia: *Statistical Indicators*, 2025; CEIC: Armenia Tax Revenue, 2025; International Monetary Fund: *Republic of Armenia*, 2025b.

In 2015-2024, there was an upward trend in the level of electronic reporting by small and medium-sized enterprises: the figure increased from 28% in 2015 to 96% in 2024. At the same time, there has been a gradual increase in the level of voluntary tax payments from 58% to 78%, respectively. The most intense changes were observed in 2020-2022, when key elements of the digital infrastructure were introduced and the integration of information systems between fiscal authorities was enhanced. Even though the growth in electronic reporting coverage was faster than the change in voluntary tax compliance, both processes show a stable positive correlation. This interdependence indicates the ability of digital tools not only to optimise administration but also to build behavioural loyalty to fiscal requirements among SMEs.

The generalisation of the results suggests that the digital transformation of tax administration in Armenia has had a significant impact on the qualitative parameters of the fiscal system. Increased forecasting accuracy, increased revenues, and improved voluntary compliance indicators are evidence of the effective implementation of analytical and automated solutions. These changes have been particularly effective in the administration of VAT and corporate income tax, where the use of electronic services ensured direct control over liabilities. At the same time, the stabilisation of fiscal discipline in the SMEs sector has formed the basis for reducing the risks of the shadow economy and improving the quality of macroeconomic management (International Monetary Fund, 2025a).

The growing digitalisation of administration creates new challenges for the coordination of tax, customs and financial analytics within the overall fiscal architecture. In this context, it is reasonable to move to advanced approaches to analysing the interaction between tax policy instruments and debt burden parameters. Such integration would not only strengthen the budget's resilience to exogenous shocks but also ensure a targeted match between revenues and liabilities in the medium-term financial planning.

3.3. STRUCTURE AND EFFICIENCY OF PUBLIC DEBT IN THE CONTEXT OF FISCAL RISK MANAGEMENT

In the context of the analysis of the debt policy of the Republic of Armenia, it is reasonable to identify the key indicators that most comprehensively characterise the change in the volume of public debt and the dynamics of the debt burden during the period under study. Such indicators include the ratio of total public debt to GDP, as well as the annual volume of new borrowings, which reflect the growth rate of debt obligations. The study of these parameters can assess the extent to which the borrowing strategies applied were consistent with the principles of fiscal sustainability and macroeconomic balance.

The statistics in Table 5 can be used for a comparative assessment of the level of debt intensity in the context of annual borrowings. This approach can be used to identify years in which there was a concentration of debt burden, in response to external crises or domestic economic shocks. At the same time, it is possible to trace the years of stabilisation of debt pressure, which could be the result of a revision of debt policy or budget consolidation. These changes are a relevant prerequisite for formulating a medium-term debt strategy that incorporates the level of risk and the structure of liabilities.

Table 5. Dynamics of the public debt to GDP ratio and new borrowings in Armenia, 2015-2024

YEAR	DEBT TO GDP, %	NEW BORROWINGS, MILLION USD
2015	48.1	430
2016	50.3	510
2017	53.9	670
2018	56.2	705
2019	54.9	640
2020	62.3	1,100
2021	56.0	950
2022	52.7	870
2023	51.3	780
2024	49.2	720

Note: the volume of new borrowings includes both external and domestic liabilities denominated in US dollars at the official exchange rate on the date of issue. On average, about 68% of the total amount came from external sources, reflecting the high degree of external dependence of the debt policy in the period under review.

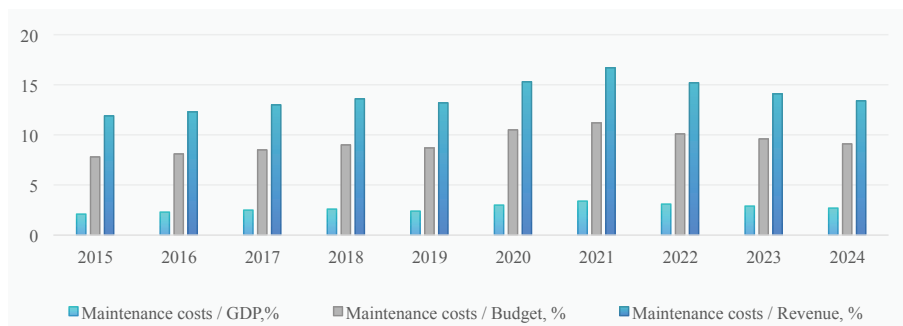
Source: compiled by the author based on Ministry of Finance of the Republic of Armenia: *Reports*, Yerevan: Ministry of Finance of the Republic of Armenia, 2025; Central Bank of Armenia: *Statistics*, 2025; International Monetary Fund: *Republic of Armenia*, 2025b.

An analysis of the data summarised in Table 5 shows that the debt burden in Armenia increased from 2015 to 2020. The ratio of public debt to GDP gradually increased, reaching a maximum of 62.3% in 2020. This growth correlates with the intensification of anti-crisis financing caused by the COVID-19 pandemic, which led to a significant increase in public borrowing to 1,100 million USD in the respective year. Since 2021, the situation has been stabilising, with a gradual decline in this indicator to 49.2% in 2024, while new debt borrowings have decreased from 950 million USD to 720 million USD.

The results obtained indicate the implementation of a policy of gradual debt financing reduction in the post-crisis period, accompanied by the introduction of a budget rule, a reduction in external borrowing and the prioritisation of domestic financing to cover the budget deficit. In 2022-2024, there was a consistent decline in dependence on external sources of financing while maintaining an acceptable level of debt pressure. The dynamics of debt indicators reflect signs of debt consolidation aimed at reducing macro financial risks and restructuring the portfolio towards lowering the medium-term burden on the budget. This positioning strengthens the preconditions for fiscal sustainability and sound debt management.

A comprehensive assessment of debt policy sustainability requires an analysis of the dynamics of debt service costs as an element of direct fiscal pressure. Debt service costs determine the number of resources withdrawn from potentially productive expenditures and form restrictions on the financing of social, infrastructure and regulatory functions of the state. To determine the level of this burden, it is advisable to examine the change in the share of debt service costs in the structure of GDP, total budget, and budget revenues over ten years. A visualisation of the relevant indicators is presented on Graph 3.

Graph 3. Key debt indicators in Armenia, 2015-2024



Source: compiled by the author based on Ministry of Finance of the Republic of Armenia: *Reports*, Yerevan: Ministry of Finance of the Republic of Armenia, 2025; Central Bank of Armenia: *Statistics*, 2025; International Monetary Fund: *Republic of Armenia*, 2025b.

The indicators on Graph 3 show an increase in the fiscal burden on the Armenian budget system in 2020-2021, which coincided with the intensification of debt resources during the anti-crisis response to the COVID-19 pandemic. The share of debt service expenditures of GDP increased from 2.1% in 2015 to 3.4% in 2021, indicating an increase in the cost of public liabilities in the context of the national economy. Starting in 2022, the respective indicator will

show a downward trend, reflecting the stabilisation of the debt strategy and a shift towards domestic financing instruments. The share of servicing costs in the structure of budget revenues also shows a gradual decline, although in 2024 it remains at over 13%, which continues to form a significant burden. These data justify the need to improve the debt structure with an emphasis on the long-term sustainability of the servicing parameters.

Based on the identified dynamics, it is possible to state that Armenia's debt policy is gradually shifting from reactive management to a conceptually proactive model focused on minimising macrofinancial risks. The structure of public debt has seen a decrease in the share of short-term instruments and an expansion of the segment of concessional and domestic borrowing sources, which is an indicator of improved debt sustainability. At the same time, a significant share of liabilities denominated in currencies with high volatility, such as the USD and EUR, remains a factor of potential vulnerability to external economic shocks. Given this, it is reasonable to address currency risk management and further structural transformation of the debt portfolio. The identified trends provide a methodological basis for moving to an analysis of the efficiency of the use of borrowed resources through the prism of the effectiveness of social spending.

3.4. THE EFFECTIVENESS OF SOCIAL EXPENDITURES IN THE SYSTEM OF PROGRAMMATIC BUDGETING

In the empirical analysis of the effectiveness of social expenditures, the key is to quantify the amount of budget funding, and the actual results achieved under the implemented programmes. This approach can identify the correlation between the amount of state support and the coverage of the population with basic social services, which is a determining factor in the implementation of the program-targeted approach to budgeting. In this context, the priority is not the absolute level of expenditures, but the indicators of specific expenditures per beneficiary, which provide an assessment of the actual effectiveness of social measures.

To provide a systematic view of the level of implementation of social policy in the field of human capital, three areas characterised by the largest number of resources were identified: education, healthcare and social protection. The choice of these sectors is based on their crucial importance for the formation of the social welfare index and the level of institutional sustainability. Table 6 shows the annual amounts of funding within these areas, as well as quantitative indicators of population coverage by the relevant services for the years 2015-2024. This format of information presentation enables a quantitative as-

assessment of transformations in the system of state provision of social guarantees in the dynamics.

Table 6. Funding and number of people covered in key social programmes in Armenia, 2015-2024

Year	Education funding, billion drams	Students reached, thousand people	Healthcare financing, billion drams	Patients covered: a thousand people	Social security funding, billion drams	Beneficiaries reached: a thousand people
2015	105	360	70	480	210	720
2016	108	362	73	490	215	725
2017	112	365	76	495	220	730
2018	115	368	79	500	225	735
2019	120	370	82	510	230	740
2020	127	372	86	520	240	750
2021	133	375	91	530	250	760
2022	140	377	95	540	260	770
2023	148	380	98	550	270	780
2024	155	382	102	560	280	790

Note: funding is presented in actual values in billion AMD; coverage – in thousand people, including people who used the state programme during the year; beneficiaries – recipients of targeted social assistance and pensions.

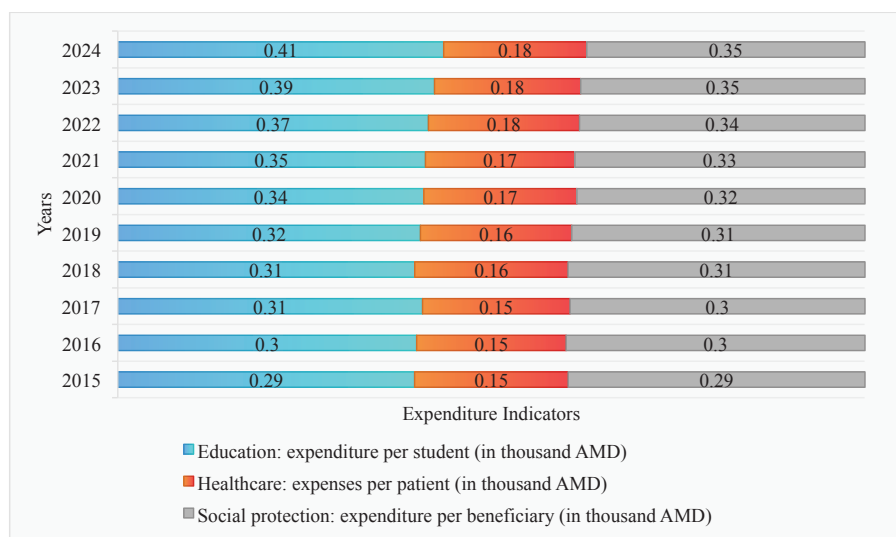
Source: compiled by the author based on Ministry of Finance of the Republic of Armenia: *Reports*, Yerevan: Ministry of Finance of the Republic of Armenia, 2025; Statistical Committee of the Republic of Armenia: *Statistical Indicators*, 2025; World Bank: *The World Bank in Armenia*, 2025; United Nations Development Programme: *Building Forward Better – UNDP in Armenia*, Yerevan: UNDP, 2025.

A steady increase in budgetary funding can be detected in all three key sectors of the social sphere during the analysis period, accompanied by a gradual expansion of the population’s coverage of basic services. In the education sector, expenditures increased from 105 billion AMD in 2015 to 155 billion AMD in 2024, while the number of students enrolled in the general secondary education system increased by 22,000. The healthcare sector recorded an increase in funding by over 45% with a corresponding increase in the number of people covered by 80,000, indicating an increase in access to healthcare services. The most intensive growth was in the social protection sector: the volume of allocations increased from 210 billion AMD to 280 billion AMD, while the number of beneficiaries increased from 720 thousand to 790 thousand. Despite

the overall positive dynamics, the growth rate of the number of beneficiaries is significantly lower compared to the growth of funding, which indicates the need to further assess the efficiency of resource allocation and the degree of targeting of the implemented programmes.

In the context of assessing the effectiveness of programme-targeted budgeting, it is reasonable to use expenditure efficiency indicators, which are defined as the ratio between total budget allocations and the number of people who received services under the relevant programme. Such indicators reflect the average cost of providing social services per recipient, providing an analytical basis for assessing the level of resource efficiency. The calculation of these parameters can be used to compare the dynamics of efficiency between different functional sectors and establish whether the increase in funding is the result of the intensification of service provision or is due solely to the expansion of the expenditure side of the budget. The relevant trends are shown in Figure 4, which reflects the change in the specific cost of social services over the years.

Graph 4. Expenditure efficiency indicators for social programmes in Armenia, 2015-2024



Source: compiled by the author based on Ministry of Finance of the Republic of Armenia: *Reports*, Yerevan: Ministry of Finance of the Republic of Armenia, 2025; Statistical Committee of the Republic of Armenia: *Statistical Indicators*, 2025; World Bank: *The World Bank in Armenia*, 2025; United Nations Development Programme: *Building Forward Better – UNDP in Armenia*, Yerevan: UNDP, 2025.

Graph 4 shows a steady increase in the unit cost per beneficiary in all three social sectors analysed, reflecting an increase in the average cost of service provision, while the coverage has remained relatively stable. In the education sector, this indicator increased from 0.29 thousand AMD in 2015 to 0.41 thousand AMD in 2024, which is equivalent to an increase of more than 40%. In the healthcare system, the cost per patient increased from 0.15 thousand AMD to 0.18 thousand AMD, maintaining a moderate trend. In the social protection sector, the increase amounted to 0.06 thousand AMD, which indicates a steady expansion of programmes while maintaining the focus on supporting vulnerable categories of the population. In general, the increase in specific expenditures can be interpreted as a sign of improvement in the quality-of-service delivery, but it requires additional verification in terms of the compliance of the achieved social results with the planned goals.

The rise in social spending in Armenia is consistent with the main ideas of public welfare economics, which promotes focused spending to produce more effective social results. A move towards more efficient resource allocation is suggested by the consistent increase in spending per beneficiary, particularly in areas like social protection, healthcare, and education. This pattern is in line with fiscal sustainability theory, which emphasises that in order to maintain social stability and lessen inequality, fiscal policies should strike a compromise between long-term budget stability and fair resource allocation.²³ The increase in education funding per student, for example, reflects human capital theory, which underscores the importance of investing in education for long-term economic growth and societal well-being.²⁴ Armenia's emphasis on increasing the effectiveness of social and educational spending shows that the government is coordinating fiscal policy with the objective of boosting economic potential and human capital.

Empirical studies on programmatic budgeting and fiscal decentralisation, which emphasise the efficacy of outcome-based resource allocation, are likewise consistent with these findings. Countries implementing program-based budgeting systems, like Armenia, typically see better resource targeting and improved fiscal management.²⁵ Similar reforms in other transition economies, such as Georgia, have demonstrated that medium-term budgeting frameworks can lead to more efficient public spending and greater fiscal stability. However,

²³ Alesina, A. et al.: Fiscal policy, profits, and investment, *NBER Working Paper Series*, (7207) 1999.

²⁴ Becker, G.S.: *Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education*, third ed., Chicago: The University of Chicago Press, 1994.

²⁵ Curristine, T.: Government performance: Lessons and challenges, *OECD Journal of Budgeting*, 5(1) 2005, pp. 127-151.

the slower rate of coverage extension indicates that more targeting has to be done, especially to guarantee that resources reach marginalised or rural areas, even though Armenia has made great strides in expanding funding for social programs.²⁶

The study determined that the implementation of medium-term budget planning in Armenia has contributed to strengthening fiscal management and the coherence of budget policy with macroeconomic targets. Starting in 2018, the average annual deviations between forecast and actual budget revenues and expenditures have been reduced, which is consistent with the introduction of the budget rule and the spread of the program-targeted approach. At the same time, the transparency index of the budget process has been gradually improving, due to the expansion of reporting and audit control, which confirms institutional progress in fiscal responsibility.

One of the key factors in improving revenue efficiency was the introduction of digital technologies in tax administration. Starting in 2020, there was an increase in tax elasticity, particularly for income tax and value added tax, accompanied by the introduction of e-filing, e-audit, real-time monitoring and preventive control systems. As a result, the VAT gap has been reduced and voluntary compliance among small and medium-sized businesses has increased, indicating greater fiscal inclusiveness.

Armenia's debt policy in 2015-2024 was shaped by significant external challenges, including the COVID-19 pandemic and inflationary shocks, but demonstrated a gradual shift from an extensive to a proactive management model. The share of concessional borrowings in the debt portfolio increased, and the medium-term debt management strategy reduced new borrowings and servicing burden. At the same time, maintaining the share of external liabilities in currencies with high volatility requires further diversification of financing instruments and enhancing internal debt sustainability.

The assessment of social expenditures confirmed an increase in budget support in the areas of education, healthcare and social protection, accompanied by a moderate expansion of service coverage. The integration of coverage indicators and average expenditures per recipient revealed an increase in specific expenditures, particularly in the education and social sectors. These dynamics demonstrate the potential of budget policy to reduce social inequality, if programmes are targeted and effective.

²⁶ Buchanan, J. M., Tullock, G.: *The Calculus of Consent Logical Foundations of Constitutional Democracy*, University of Michigan Press & Ann Arbor Paperbacks, 1969.

3.5. POLICY LIMITATIONS, RISKS, AND RECOMMENDATIONS

Table 7 provides a succinct overview of the key policy implications derived from Armenia’s fiscal reforms, focusing on areas such as digital transformation, medium-term budgeting, fiscal transparency, debt management, and social spending efficiency.

Table 7. Policy implications for developing economies based on Armenia’s fiscal reforms

POLICY AREA	IMPLICATIONS FOR DEVELOPING ECONOMIES
Digital Transformation	Invest in digital tools for tax administration, such as e-filing and e-audit, to enhance revenue collection and compliance.
Medium-Term Budgeting	Implement medium-term fiscal frameworks to improve forecasting accuracy and align fiscal policies with long-term development goals.
Fiscal Transparency	Strengthen budget transparency by adopting international standards for budget publication and enhancing citizen engagement.
Debt Management	Prioritise sustainable debt management strategies, focusing on reducing reliance on short-term external debt and enhancing domestic borrowing.
Social Spending Efficiency	Increase focus on targeted social spending by using expenditure efficiency indicators to ensure resources are used effectively.

Source: author’s analysis based on collected data

However, the successful implementation of these reforms is not without its challenges and risks. Cybersecurity is one major risk. Tax administrations are more susceptible to cyberattacks and data breaches as a result of their growing reliance on digital platforms. These dangers have the potential to erode public confidence in government processes and lead to the loss or alteration of private taxpayer information. Protecting digital tax systems from outside threats is essential, especially in emerging economies where cybersecurity infrastructures may be weaker. To reduce these risks, it is essential to invest in robust IT infrastructure, implement effective cybersecurity measures, and conduct ongoing monitoring.

Digital exclusion is a serious issue as well, especially for small enterprises and those living in underdeveloped or rural areas. Not all organisations and individuals have equal access to technology or digital literacy, despite the fact that digital tax systems can improve compliance and reduce procedures. Unfair access to government services and compliance procedures may result from

SMEs' difficulties implementing e-filing systems or other digital tools, particularly in rural areas. This digital divide has the potential to worsen inequality and deny some segments of society the advantages of digital changes. In order to solve this, governments need to fund digital literacy initiatives and guarantee that people who are unable to use online platforms may still access alternate, non-digital channels.

Furthermore, the speed at which digital solutions are being adopted can surpass institutions' ability to adequately oversee and control these systems. It may be difficult for public institutions in developing nations, in particular, to have the institutional frameworks, technical expertise, and resources required to supervise the digital transformation of fiscal policy. Reforms run the potential of causing inefficiencies, data processing errors, or even the misuse of digital tools for political or financial advantage if adequate capacity-building initiatives are not made.

Finally, there is a risk of becoming overly dependent on technology, even while digital reforms have the potential to increase efficiency. A breakdown in these systems, whether brought on by software bugs, technological difficulties, or cyberattacks, might completely stop the fiscal process since digital technologies are now essential to tax administration and fiscal management. Strong backup plans and contingency planning become necessary as a result, and the efficiency and dependability of digital instruments must be continuously assessed.

4. DISCUSSION

The results of the study demonstrated that the digital transformation of the tax administration system in the Republic of Armenia was accompanied by an increase in the elasticity of fiscal revenues and an improvement in the level of voluntary tax compliance, in particular in the segment of small and medium-sized enterprises. The elasticity of corporate tax increased from 0.92 to 1.21 amid an increase in the share of entities covered by electronic reporting to 96%, indicating the formation of a stable relationship between automated control procedures and the efficiency of tax administration. At the same time, debt indicators improved, including a decrease in the share of debt service costs, which was correlated with the transition to medium-term budget planning. Despite the increase in specific expenditures in the social sectors, the pace of coverage remained moderate, indicating that access restrictions due to institutional or targeting barriers remained in place. The improved accuracy of budget forecasting was due to the adaptation of macroeconomic models to changes in the external environment, including inflation and currency fluctua-

tions. The set of identified dependencies confirmed the effectiveness of the integrated approach to fiscal management, which combined digital, institutional, and programmatic-targeted mechanisms.

The analysis determined that the use of digital services in the field of tax administration, in particular, e-declaration, e-audit and risk-based monitoring, increased the elasticity of income and voluntary compliance. Similar patterns were highlighted by L. Ripol-Saragosi and E. Gomeleva,²⁷ which emphasise that digital tools help reduce transaction costs, standardise reporting procedures and increase transparency of interaction between taxpayers and regulatory authorities. Comparison of empirical data has confirmed that digitalisation serves not only as a technological tool, but also as a means of long-term institutionalisation of tax discipline through automated control and information influence. The record of an increase in the tax elasticity within the studied fiscal system was consistent with the assumption that the efficiency of administration depends on the level of digitalisation. A systematic review by E. Bassey et al.²⁸ proposed a conceptual model of digital tax administration, which defines the relationship between technological maturity and fiscal efficiency. According to this classification, the digital services implemented in Armenia corresponded to the third level of automated management with analytical support, which ensured the identification of a clear quantitative correlation between the level of digitalisation and changes in the tax behaviour of business entities.

The study quantified the correlation between the level of electronic interaction between taxpayers and fiscal authorities and the voluntary compliance rate, which reached 78% in 2024. A methodologically similar approach was used by M. Nose and A. Mengistu,²⁹ where the technological adaptation of tax administrations in different countries was studied from the standpoint of comparative analysis. This study determined that the maximum levels of voluntary tax payment were observed in jurisdictions with a high degree of synchronisation of information systems and low barriers to access to electronic services. The comparison concluded that in Armenia, similar institutional and infrastructural parameters contributed to the formation of voluntary tax compliance without the use of additional enforcement measures. The growth of average annual value-added tax revenues and increased control over transactions in the electronic environment correlated with the effects of the introduction

²⁷ Ripol-Saragosi, L., Gomeleva, E.: Application of digital tools to enhance tax administration processes, *SHS Web of Conferences*, 106 2021, pp. 01024.

²⁸ Bassey, E., Mulligan, E., Ojo, A.: A conceptual framework for digital tax administration - A systematic review, *Government Information Quarterly*, 39(4) 2022, pp. 101754.

²⁹ Nose, M., Mengistu, A.: Exploring the adoption of selected digital technologies in tax administration: A cross-country perspective, *IMF Notes*, 2023(008) 2023.

of an electronic fiscal receipt and the integration of information flows with customs registers. T. Hanappi et al.³⁰ studied the issue of taxation of digital transactions from the perspective of comparing territorial and extraterritorial principles. The analysis found that the maximum efficiency of collection is ensured by the existence of a unified tax base for domestic and cross-border transactions. In the study, this logic was implemented through the alignment of value-added tax accounting with customs declarations, which reduced the tax gap and increased the transparency of calculations.

Fiscal inclusion, recorded through changes in the behavioural patterns of taxpayers, was explained in the results of Y. Rahman,³¹ who studied the macroeconomic effect of tax pressure on consumer behaviour. The study confirmed that the predictability and clarity of tax rules reduce the motivation to evade, while increasing the perception of the tax burden as an element of mutual responsibility. Comparison with the data obtained showed that the growth of voluntary payment in Armenia was achieved through the introduction of mechanisms that ensured information symmetry between taxpayers and the tax administration. The application of a structured approach to medium-term planning in the context of the study involved reconciling forecast and actual budget parameters in an environment of high macroeconomic volatility. The methodological basis of this approach was reflected in the study by T.R. Curristine et al.,³² which identified the key elements of building a medium-term fiscal framework, including macro assumptions, fiscal constraints, benchmarks, and the introduction of monitoring tools. The compliance of the obtained results with these elements confirmed the expediency of applying this logic as a tool for ensuring a balanced budget in conditions of limited resources.

The analysis of the dynamics of the budget deficit, including an assessment of the reduction of the gap between the planned and actual figures, recorded the effect of the introduction of the mechanisms of top-level budgeting. The consistency of this approach with the provisions of D. Moretti et al.³³ was confirmed by the fact that in the countries of the Organisation for Economic Co-operation and Development, top-down planning ensured strict adherence to resource limits adapted to sectoral priorities. The compliance with the meth-

³⁰ Hanappi, T., Jakubik, A., Ruta, M.: Fiscal revenue mobilization and digitally traded products: Taxing at the border or behind it?, *Journal of Policy Modeling*, 46(4) 2024, pp. 779-801.

³¹ Rahman, Y.: Effects of taxes on consumer behavior: A macro-economic study, *Golden Ratio of Taxation Studies*, 3(2) 2023, pp. 67-75.

³² Curristine, T. R. et al.: How to develop and implement a medium-term fiscal framework, *IMF How To Notes*, 2024(005) 2024.

³³ Moretti, D., Keller, A., Majercak, M.: Medium-term and top-down budgeting in OECD countries, *OECD Journal on Budgeting*, 23(3) 2023.

odological guidelines confirmed that the reduction of the deficit in 2024 to the projected level was achieved through the introduction of an effective fiscal framework with clear responsibilities and expenditure control. The increase in the efficiency of budget programmes in the social sector was accompanied by an increase in the specific expenditures per recipient of services, which indicated a strengthening of targeting and a more targeted use of resources. Similar aspects were considered by O. Cherniaieva et al.³⁴ who emphasised the importance of combining results-based planning with the requirements of fiscal sustainability. The analysis proved that effective budget management involves the integration of short-term performance indicators into a long-term strategy of financial balance, which was confirmed by comparing the coverage of social services and the cost per unit of service in the model under study.

The analysis revealed an increase in institutional capacity to implement the performance-based approach. This process has been driven by a gradual increase in programme coverage and a reduction in the variability of expenditures across functional sectors. I. Shopina et al.³⁵ analysed the legal basis for the formation of state-targeted programmes and emphasised the importance of legal indicators for evaluating results. The comparison revealed that it was the formalisation of targets in combination with legal monitoring tools that ensured structural balance in the budget process and increased transparency in resource allocation. The study found that the increase in the efficiency of social expenditures was accompanied by an increase in the specific indicators in the areas of education, healthcare and social protection. However, the pace of coverage expansion indicated the need to consider social differences and differentiation of access. L. Rzhanitsyna and E. Kravchenko³⁶ analysed the mechanisms of institutionalisation of gender responsive budgeting and proved that ignoring structural social differences reduces the effectiveness even in the case of increased funding. The results confirmed that ensuring a steady increase in specific expenditures without considering the characteristics of target groups limits the potential for social inclusion.

The decline in the share of public debt concerning gross domestic product from 62.3% in 2020 to 49.2% in 2024 demonstrated the effectiveness of the

³⁴ Cherniaieva, O. et al.: Optimizing budgeting and financial management for sustainable economic growth and fiscal resilience, *European Journal of Sustainable Development*, 14(2) 2025, pp. 430-450.

³⁵ Shopina, I. et al.: State target programmes in the system of results-based budgeting: Legal aspect, *Social and Legal Studios*, 3(7) 2024, pp. 190-202.

³⁶ Rzhanitsyna, L., Kravchenko, E.: Incorporating gender in program-targeted budgeting (Recommendations for how to integrate the gender approach in a socially significant decision), *Problems of Economic Transition*, 63(4-6) 2022, pp. 243-256.

implemented fiscal consolidation strategy. S. Ando et al.³⁷ substantiated that effective consolidation requires the simultaneous use of instruments from both the revenue and expenditure sides of the budget, subject to clear fiscal rules. The identified trends correlated with this approach, as a decrease in borrowing was combined with an increase in the revenue base due to the digital transformation of fiscal administration. The issue of the impact of fiscal consolidation on economic growth was reflected in the study by A. Mtibaa et al.,³⁸ which examined the dynamics of the transition to debt sustainability under medium-term fiscal constraints. The study determined that a sharp fiscal tightening leads to a slowdown in economic activity, while a gradual reduction in the deficit ensures macroeconomic stabilisation. The study confirms that the implemented debt strategy did not involve drastic spending cuts but was implemented through a gradual restriction on attracting new resources, which made it possible to ensure a sustainable economic recovery after the crisis.

The comprehensive assessment of fiscal policy included an analysis of the dynamics of debt service costs as a percentage of gross domestic product and budget revenues, which indicated an increase in the efficiency of debt portfolio management. P. Heimberger³⁹ determined that the long-term effectiveness of fiscal consolidation largely depends on the structure of expenditures on a shift in emphasis from current expenditures to investment expenditures. Such a strategy was implemented by reducing the share of short-term liabilities and prioritising preferential financial instruments, which reduced debt risks and increased the adaptability of the budget system. A summary of the prerequisites for successful fiscal consolidation was the subject of a comprehensive analysis by V. Balasundharam et al.,⁴⁰ where the critical factors are the accuracy of forecasts, the quality of institutional architecture, transparency of the budget process, and political stability. The study found that these parameters were met: the budget transparency index increased from 38 to 53 points, forecasting errors decreased in the revenue and expenditure sides, and the medium-term fiscal framework demonstrated sustainability of implementation. This was used to characterise the applied model as a controlled and sustainable system of adaptation in the face of limited resources.

³⁷ Ando, S. et al.: Fiscal consolidation and public debt, *Journal of Economic Dynamics and Control*, 170(January) 2025, pp. 104998.

³⁸ Mtibaa, A., Lahiani, A., Gabsi, F. B.: Impact of fiscal consolidation on economic growth: The Tunisian case, *Journal of Risk Finance*, 23(5) 2022, pp. 558-582.

³⁹ Heimberger, P.: Fiscal consolidation and its growth effects in euro area countries: Past, present and future outlook, *Review of Evolutionary Political Economy*, 2025.

⁴⁰ Balasundharam, V. et al.: Fiscal consolidation: Taking stock of success factors, impact, and design, *IMF Working Papers*, 2023(063) 2023.

The results of the analysis confirmed that fiscal consolidation was not accompanied by the displacement of investment expenditures, which maintained the volume of public funding for capital programmes within the established priorities. O. Jacques⁴¹ provided empirical evidence that austerity measures in most countries led to a reduction in investment expenditures due to their deferred political value. Instead, the preservation of the investment component in the study indicated the existence of an alternative fiscal management architecture capable of supporting economic activity without compromising development. The analysis also covered the indirect effects of the debt strategy, including the impact on the financial stability of the banking sector. H.U. Rahman et al.⁴² demonstrated that effective fiscal consolidation in highly indebted countries helps to reduce the share of non-performing loans by stabilising the macrofinancial environment. The study recorded a decrease in the riskiness of public debt and stabilisation of interest rates in the banking system, which confirmed the existence of the above dependence between the quality of fiscal management and the behaviour of financial institutions.

The study determined that the gradual reduction of the budget deficit ensured the stabilisation of the debt burden without significant changes in the structure of revenues. This approach is consistent with the findings of I. Hussain et al.⁴³ who used empirical evidence to prove that gradual fiscal adjustments are more effective in achieving debt sustainability than hard cuts with a short implementation horizon. The results demonstrated that debt indicators declined in proportion to budget adjustments, without the need to cut priority expenditures, which avoided fiscal shocks and maintained the stability of social and economic parameters. Medium-term budget planning was substantial in the implementation of the budget policy, ensuring the integrity of fiscal targets and improving the quality of forecasting. D. Radu,⁴⁴ in the analysis of the medium-term budgetary frameworks in the European Union, determined that the stability of fiscal parameters is ensured only if monitoring and evaluation procedures are strictly followed. The study confirmed the practical implementation of these requirements: compliance with regulatory restrictions and targets

⁴¹ Jacques, O.: Austerity and the path of least resistance: How fiscal consolidations crowd out long-term investments, *Journal of European Public Policy*, 28(4) 2021, pp. 551-570.

⁴² Rahman, H. U., Arian, A., Sands, J.: Does fiscal consolidation affect non-performing loans? Global evidence from heavily indebted countries (HICs), *Journal of Risk and Financial Management*, 16(9) 2023, pp. 417.

⁴³ Hussain, I., Hussain, J., Bilal, H.: An analysis of the success of fiscal adjustment in reducing public debt: Evidence from Pakistan, *PLoS ONE*, 17(6) 2022, pp. e0269536.

⁴⁴ Radu, D.: *Domestic Medium-term Budgetary Frameworks in the EU: Fit for Purpose and for the Future?*, Luxembourg: Publications Office of the European Union, July 2023.

reduced forecasting errors and reduced debt risks, which proved the effectiveness of the applied model.

The analysis of the budget process showed that medium-term programmes served as a tool for strengthening fiscal predictability and ensuring that short-term decisions are consistent with strategic priorities. H. Yergin et al.⁴⁵ emphasised that the effectiveness of such programmes depends on their structured nature and clearly defined accountability mechanisms. The results obtained in the study were consistent with these conclusions: the practical implementation of medium-term plans was ensured by the detailing of parameters and compliance with indicative standards, which led to higher efficiency of management decisions. The introduction of medium-term planning resulted in a decrease in the volatility of the budget deficit and debt burden, which was accompanied by signs of macrofinancial stabilisation. A. Centinaio et al.⁴⁶ substantiated that those predictable fiscal decisions contribute to a reduction in the risk premium in the capital market, affecting the cost of public debt. According to the study, a similar trend was observed through a decrease in bond yields in response to the introduction of fiscal discipline and a medium-term financial framework.

The shift of the fiscal focus from short-term to medium-term targets correlated with the approaches proposed by H. Tollini,⁴⁷ who emphasised the importance of institutionalising medium-term planning as the basis of the budget strategy. The study confirms that the formation of deficit targets and debt constraints ensured the sustainability of fiscal management and consistency between budget cycles and socio-economic development goals. The optimisation of budget execution mechanisms was accompanied by the modernisation of treasury services based on the principles of modularity and digital integration. M.A. Mansurov⁴⁸ proposed a functional model of the treasury system adapted to the conditions of medium-term planning, which provided for the automation of payment obligations processing and strengthening of internal control. The implementation of a similar approach in the study reduced time losses associated

⁴⁵ Yergin, H., Günsan, N., Yiğenoğlu, K.: Medium term programmes implemented in Türkiye: Problems and solution suggestions, *Fiscal Economics*, 7 2023, pp. 453-470.

⁴⁶ Centinaio, A. et al.: Government decisions and macroeconomic stability: Fiscal policies and financial market fluctuations, *International Review of Economics & Finance*, 96(A) 2024, pp. 103599.

⁴⁷ Tollini, H.: Brazil: Moving the budget focus from the short to the medium term, *OECD Journal on Budgeting*, 21(2) 2021, pp. 2-17.

⁴⁸ Mansurov, M. A.: Functional model for the improvement of the treasury system for budget execution in the medium term, *Turkish Journal of Computer and Mathematics Education*, 12(11) 2021, pp. 5096-5101.

with budget transactions and ensured an increase in the operational efficiency of the public finance management system.

The final analysis demonstrated that the results obtained were consistent with current scientific approaches to the transformation of fiscal management. The study established that the combination of digital tax administration tools with a medium-term budget planning framework ensures the stability of the macro-financial environment and the predictability of budget policy. An empirical comparison with the relevant theoretical provisions confirmed the effectiveness of an integrated approach based on a combination of digital, program-targeted and debt instruments in the context of fiscal transformation.

5. CONCLUSION

The results confirm the effectiveness of the combination of digital tools and a programme-targeted approach to improving fiscal efficiency. For the first time in Armenia, the study summarised the effectiveness of implementing such solutions as e-filing, e-audit, and centralised risk-based monitoring systems in the context of their impact on tax elasticity, voluntary compliance, and the overall budget revenue base. Among the key findings of the study is the notion that the average annual growth of the corporate income tax increased from 5.6% in 2015-2019 to 8.2% in 2020-2024, and the tax elasticity coefficient increased from 0.92 to 1.21, indicating an increase in the efficiency of administration. The VAT system also recorded an improvement in the fiscal result, which was accompanied by a reduction in the VAT gap. The level of electronic reporting coverage of small and medium-sized enterprises increased from 28% in 2015 to 96% in 2024, and the voluntary payment of taxes increased from 58% to 78%. At the same time, the deviations between the projected and actual budget values decreased: from 2.9% in 2019 to 0.87% in 2024 on the revenue side, and from 4.3% to 0.8% on the expenditure side.

In the area of debt policy, the NBU found that the public debt-to-GDP ratio declined from a peak of 62.3% in 2020 to 49.2% in 2024, with new borrowings falling from 1,100 million USD to 720 million USD. After rising to 3.4% of GDP in 2021, the share of debt service costs in GDP declined to 2.6% in 2024. In terms of social expenditures, there was an increase in specific expenditures: in education from 0.29 to 0.41 thousand AMD per student, in social protection from 0.29 to 0.35 thousand AMD per beneficiary, indicating an improvement in the quality of funding. There was also an improvement in the transparency of the budget process: The Open Budget Index increased from 38 to 53 points during the period under review, reflecting the strengthening of institutional accountability.

The study was limited by several issues related to the heterogeneity of the official statistical base in terms of quarterly data disaggregation, by social policy sectors. In addition, the lack of access to taxpayer microdata made it impossible to conduct a deeper analysis of the behavioural aspects of tax compliance. Much of the data on assessing the effectiveness of programme budgeting is presented in aggregate form, which limits the possibility of segmental analysis by region or population category. Further research should address quantitative modelling of the impact of digital interventions on the tax behaviour of different segments of the economy using logistic and panel models. A promising direction is to extend the comparative analysis to countries with similar institutional characteristics to test the universality of the identified patterns.

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