

State budget system improvement for informed decision-making in Latvia

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Abstract. The study aims to improved the state budget system to ensure informed decision-making, which will contribute to more efficient use of budget funds and increase national financial stability. A comparative analysis of successful budget planning practices in other countries, such as Sweden, Canada and Estonia, was conducted, and the legal framework for coordination between government agencies in the budget management process in Latvia was reviewed. The methodological approach was based on the analysis of statistical data from official sources and regulations, as well as the use of information from government and ministerial websites. The results of the study showed that the analysis of revenues and expenditures of the Latvian state budget for the period from 2019 to August 2024 revealed a steady increase in revenues, with the exception of a decline in 2020 due to the pandemic, and an increase in expenditures, which requires optimisation and better coordination between government agencies. The study determined that the existing legal framework of Latvia regulating coordination between state institutions in budget management needs to be improved to increase the efficiency of this interaction. A comparison of Latvia's budget management systems with the successful practices of Sweden, Canada and Estonia demonstrated management improvement potential by introducing long-term strategic planning, as in Sweden, integrating results into the budget process, as in Canada, and increasing

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transparency and public involvement, as in Estonia. Based on the data obtained, recommendations were developed to integrate new technologies into the budget process and increase transparency, contributing to a more efficient use of public resources. The results indicate the need to reform the state budget system to ensure informed decision-making in Latvia. This will make it possible to use budget funds more rationally, increase the transparency of financial processes and strengthen public confidence in government decisions

Keywords: financial management; innovative technologies; international experience; audit; performance evaluation

Introduction

Improving the state budget system is a key element in ensuring stable economic development and effective financial management in Latvia. In the context of current economic challenges and growing demands for transparency and accountability in government processes, the need to reform budgetary mechanisms is becoming particularly urgent.

The need for this study arose due to several significant problems in the Latvian state budget system that negatively affect the process of making informed decisions. The main challenges include a lack of transparency in budget processes, inefficient use of public funds, and a lack of data integration between government agencies. This leads to low efficiency of financial management and limits the possibilities for introducing innovative approaches to budget planning. In addition, the current economic challenges and growing pressure on the government to increase accountability require a review of existing mechanisms and the introduction of new technologies to ensure effective management of financial resources. Given these challenges, research on improving the state budget system is a necessary step to improve the quality of decision-making, enhance financial stability, and strengthen public trust in government processes.

The problem of research in this area is determined by an insufficient understanding of the mechanisms of formation and management of the state budget for making informed decisions. In particular, the issues relate to the effectiveness of citizen involvement in the budget process, the identification of the main factors influencing public financial policy, and the assessment of the reliability of the tax system. Additionally, the impact of harmonisation of the national fiscal policy with the requirements of the EU and the participation of local authorities in budget planning are investigated.

I. Linina *et al.* (2023) addressed the involvement of citizens in the budget planning process in local self-government in Latvia, emphasising the importance of openness of municipalities to increase the interest of residents. E. Zubule (2023) assessed the socio-economic factors influencing the state financial policy of Latvia, focusing on the need to consider the main challenges. A. Leontyev & K. Ketners (2023) analysed the reliability of the tax system, thus emphasising the importance of fairness and efficiency in its assessment. L.A. Cristea & D.M. Ungureanu (2021) analysed the fiscal policy of the EU member states in the context of economic stability, pointing out the need to align national tax systems with European criteria. B. Jatmiko *et al.* (2020) studied the impact of participation

in the budget process on local government performance in Indonesia, finding a positive effect of accounting knowledge on organisational commitment. However, gaps that require further research, including the impact of digitalisation on the transparency of budget processes, the long-term effects of public engagement, mechanisms for cooperation between different levels of government, and an assessment of the impact of fiscal decentralisation on resource efficiency, were identified.

D. Argento *et al.* (2020) conducted a comparative analysis of the impact of the COVID-19 pandemic on the budget strategies of Finland, Norway and Sweden, highlighting the diversity of approaches to public finance management during the crisis. M.M. Rubin & K. Willoughby (2021) analysed the strategies for balancing state budgets in the context of the COVID-19 pandemic and the Great Recession of 2007-2009, finding that federal support in both cases was implemented in different ways, which affected their strategies for overcoming financial difficulties (The great recession..., 2007). L. Shahini & P. Grabova (2023) studied the effect of budget revision on the Albanian economy in the context of the crisis, noting that budget restructuring often does not consider the multiplier effect, as it focuses on specific goals. C. Dick-Sagoe (2020) analysed the impact of decentralisation on the quality of local service delivery in developing countries, pointing to the need to improve transparency and accountability in local government to achieve better results. F. Manes-Rossi *et al.* (2023) studied the concept of participatory budgeting as an innovative approach to involving citizens in the processes of budget allocation, identifying key factors that stimulate public activity in financial management at the local level.

Insufficient consideration of transparency and efficiency of budget processes was identified in the context of improving the state budget system in Latvia. Existing studies mostly focus on the general principles of budget planning, without taking into account the specifics of management decisions and technologies that can improve the quality of budget management. This creates gaps in understanding the real challenges faced by public authorities and highlights the need to develop new approaches to provide more informed solutions.

The research aimed to identify the state budget system of Latvia with a focus on improving the efficiency of decision-making in the field of budget planning and financial resources management, as well as analysing the impact of these changes on the country's economic development.

To achieve the stated, the following tasks are to be addressed: to analyse the current challenges in the Latvian state budget system, in particular in terms of transparency and efficiency of budget management; to study the coordination between key state institutions, such as the Ministry of Finance, the State Audit Office to improve the efficiency of budget management; to compare the budget management systems of Latvia with successful practices of other countries to identify possible ways of improvement; to develop recommendations for the integration of new technologies and improvement of transparency of budget processes.

Materials and Methods

To analyse the current challenges in the Latvian state budget system, with a focus on transparency and efficiency of management, primary data was collected and a detailed statistical analysis of existing budget reports of Latvia for the period from 2019 to August 2024 was carried out. This analysis included the study of trends in revenues and expenditures, as well as the identification of changes in the structure of financing and budget execution.

A comprehensive analysis was used to analyse collaboration between state institutions to improve the effectiveness of budget management through interactions between key institutions such as the Ministry of Finance and the State Control Service. Firstly, a review of the legal acts regulating the budget process was carried out, with a focus on their coordination provisions. For the review, data were taken from key documents such as the Constitution of the Republic of Latvia, laws on budget and financial management, as well as resolutions of the Cabinet of Ministers. The analysis of the content of these acts was used to identify the principles that ensure interaction between state bodies in the process of budget management.

The study comparing Latvia's budget management systems with the best practices of other countries was based on the analysis of the existing budget system, in particular, budget planning and execution procedures. For this analysis, countries with successful budget management practices were selected, including Sweden, Canada and Estonia. Data was collected on their budgets, methods of control and performance evaluation, as well as mechanisms for engaging the public in the budget process. Based on this

data, a comparative analysis was conducted to identify key success factors and shortcomings in the budget management systems of the selected countries.

During the study of improving the state budget system for making informed decisions in Latvia, statistical data provided by The Treasury of the Republic of Latvia (2017) and the State Audit Office of the Republic of Latvia (2022; 2023; 2024) was analysed. In addition, the review of legal acts included the Constitution of the Republic of Latvia (1922), the Law of the Republic of Latvia "On Budget and Financial Management" (1994), the State Audit Office Law (2002), the State Administration Structure Law (2002), Regulation of the Cabinet of Ministers of the Republic of Latvia No. 385 "On Procedures for the Performance and Assessment of Internal Audit" (2013), and Regulation of the Cabinet of Ministers of the Republic of Latvia No. 239 "By-law of the Ministry of Finance" (2003). To compare Latvia's budget management systems with the successful practices of countries such as Sweden, Canada and Estonia, information from the state budget reports of these countries for 2023, obtained from official sources such as the Ministry of Finance of the Republic of Latvia (2023), Government Offices of Sweden (2023), Government of Canada (Shore *et al.*, 2024), Ministry of Finance of Estonia (2023), was used to provide a comprehensive approach to analysing and identifying possible ways to optimise budget management in Latvia.

Results

Analysing the current challenges in the Latvian state budget system is an important step towards ensuring financial stability and efficiency of public administration. In the current context, when states are facing numerous economic and social challenges, it is particularly important to study the aspects of transparency and efficiency in budget management. Efficiency of budget management means rational use of resources and achievement of the set goals with maximum benefit for the society.

The study of state budget revenues and expenditures in Latvia was relevant to determining national financial stability in the context of economic changes. This will help assess the effectiveness of budget policy and identify potential risks arising from budget consolidation (Fig. 1).

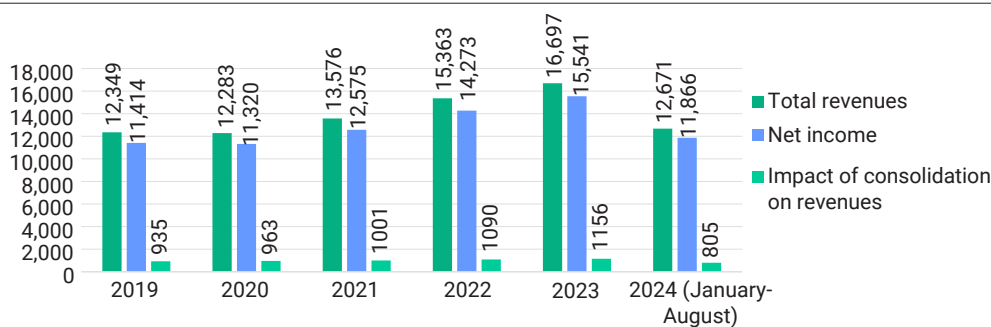


Figure 1. Analysis of state budget revenues and the impact of consolidation in Latvia for the period 2019 to August 2024, EUR million

Source: compiled by the authors based on Treasury of the Republic of Latvia (2017)

Between 2019 and August 2024, Latvia's total budget revenues demonstrated steady growth. Although there was a slight decrease in revenues in 2020, this can be explained by economic challenges, particularly the impact of the COVID-19 pandemic. Starting in 2021, revenues gradually increased, reaching new highs in the following years. The first eight months of 2024 saw further growth, indicating positive trends in economic development. Net budget revenues also showed positive dynamics. Despite a slight decline in 2020 due to economic difficulties, the following years were characterised by steady growth. Revenues increased year on year, reflecting more effective budgetary policies and the economic recovery from the pandemic.

The impact of consolidation on revenues also varied over the period. Consolidation rates have gradually increased, reflecting increased financial integration and coordination between different budgetary institutions. In general, the analysis of Latvian budget revenues for 2019 to August 2024 shows steady growth and improvement of the budget process, despite the challenges faced by the country in 2020. These positive trends point to stable economic development and more effective budget management. Further, the state budget expenditures and the impact of consolidation in Latvia for the period from 2019 to August 2024 were analysed (Fig. 2).

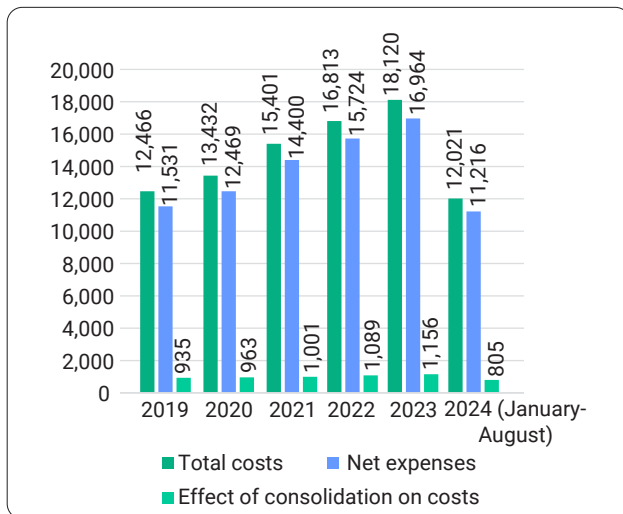


Figure 2. Analysis of state budget expenditures and the impact of consolidation in Latvia for the period 2019 to August 2024, EUR million

Source: compiled by the authors based on Treasury of the Republic of Latvia (2017)

Between 2019 and August 2024, total budget expenditures in Latvia demonstrated an upward trend. After an initial increase in 2020, caused by the need for additional spending to combat the effects of the COVID-19 pandemic, expenditures continued to grow in the following years. This growth reflects increased public investment in various economic and social sectors.

Net budget expenditures also increased during this period, indicating a growing budgetary burden. Although the

growth was less sharp than in the case of total expenses, the figures still reflect the general trend of increasing spending on public administration, social programmes and infrastructure projects. The impact of consolidation on expenditure remained stable over the period under review, with a slight increase from 2019 to 2023. This indicates some progress in the coordination of budgetary processes between different government agencies.

In general, the analysis of Latvian budget expenditures for 2019 to August 2024 indicates a significant increase in budget expenditures, which may be due to the need to overcome economic and social challenges. At the same time, the constant impact of consolidation indicates improved coordination and management of budgetary processes, which is positive for the further development of the country's financial system.

Thus, analysing the ratio of revenues and expenditures of the Latvian budget for the period from 2019 to August 2024, gradual revenue increase was determined, but the growth rate of total expenditures exceeded them. This has led to an increase in the budget deficit, which indicates the need to optimise costs and increase the efficiency of using budget funds. Moreover, the observation of net revenues and net expenditures showed a similar trend – despite the growth of net revenues, expenditures grew even faster, indicating structural problems in budget management. The impact of consolidation on revenues and expenditures remained stable, but declined in the last year, which may indicate the need to review consolidation mechanisms and strengthen coordination between government agencies to achieve stable financial management.

In addition, using the consolidated reports on the state execution budget and municipal budgets for the Republic of Latvia in 2021–2023, Figure 3 shows the total amount of the consolidated economic annual report balance sheet, public debt, revenues and expenditures.

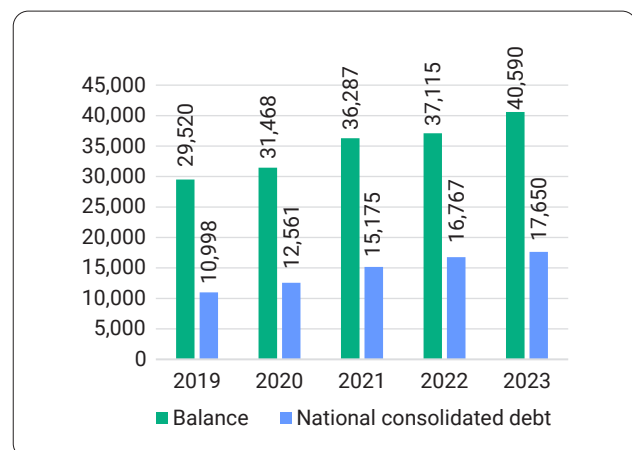


Figure 3. The total amount of the consolidated economic annual report balance sheet, public debt, revenues and expenditures in Latvia (budget execution) from 2019 to 2023, EUR million

Source: compiled by the authors based on State Audit Office of the Republic of Latvia (2022; 2023; 2024)

The analysis of the balance sheet and national consolidated debt of Latvia for the period from 2019 to 2023 revealed positive dynamics in both indicators. The balance sheet showed stable growth, which indicates an increase in national financial resources and opportunities for investment in social and economic development. This growth can be attributed to an improved economic situation, including higher budget revenues, as well as more efficient management practices.

As for the national consolidated debt, its gradual growth reflects the increase in government liabilities. Although the debt has been growing, its level remains relatively controlled in the context of a growing balance sheet.

However, this growth requires careful monitoring and analysis, as excessive debt could negatively affect the national financial stability. Overall, despite the increase in debt, the positive trend in balance sheet indicators indicates the potential for economic development and the need to further optimise financial policy to ensure stability.

Coordination between government agencies plays an important role in the budget management process. To ensure the effective implementation of budget programmes and optimisation of resources, relevant regulations should be employed. Table 1 provides an overview of the main documents that regulate the interaction between state institutions in budget management in Latvia.

Table 1. Overview of the legal framework for coordination between public institutions in the budget management process in Latvia

Legal act	Description	Key points for coordination	Recommendations for improving efficiency
Constitution of the Czech Republic	The fundamental law establishes the legal framework for the functioning of state bodies and defines the principles of the state system, including the budget process	Defines the basic principles of coordination between government agencies	Ensure strict adherence to constitutional principles in the budget process
Law of Ukraine No. 3898-XII "On Budget and Financial Management"	Regulates the process of preparation, approval and execution of the state budget, defines the responsibilities of participants in the budget process and the mechanisms of control and reporting	Defines the roles and responsibilities of different institutions in the budget process and establishes coordination mechanisms between them	Develop additional mechanisms of interaction between institutions to improve the efficiency and effectiveness of decision-making
State Administration Structure Law	Defines the responsibilities of the State Control Service in auditing and controlling the use of budget funds, as well as the mechanisms of interaction with other state institutions	Describes procedures for joint audits and coordination of control actions between institutions	Introduces regular joint audits to increase the transparency and effectiveness of budget control
Regulation of the Cabinet of Ministers of the Republic of Latvia No. 385 "Procedures for the Performance and Assessment of Internal Audit"	Establishes procedures for internal audit and control in state institutions and defines mechanisms for coordination between internal audit units and other bodies	Describes the mechanisms of interaction between internal audit departments and other institutions	Increases the independence and resources of internal auditors to improve audit quality
Regulation of the Cabinet of Ministers of the Republic of Latvia No. 239 "By-law of the Ministry of Finance"	Defines the functions and responsibilities of the Ministry of Finance in the budget process and regulates interaction with other state institutions for effective budget planning	Ensures coordination between the Ministry of Finance and other institutions	Strengthens the role of the Ministry of Finance in coordinating and overseeing budget processes

Source: compiled by the authors based on Constitution of the Czech Republic (1992), Law of Ukraine No. 3898-XII "On Budget and Financial Management" (1994), State Administration Structure Law (2002), Regulation of the Cabinet of Ministers of the Republic of Latvia No. 239 "By-law of the Ministry of Finance" (2003), Regulation of the Cabinet of Ministers of the Republic of Latvia No. 385 "On Procedures for the Performance and Assessment of Internal Audit" (2013)

A review of the legal framework for coordination between state institutions in the budget management process in Latvia shows that there are structured mechanisms in place to ensure effective interaction between different state bodies. Legal acts, such as the Constitution of the Republic of Latvia (1922) and the Law of the Republic of Latvia "On Budget and Financial Management" (1994), State Audit Office Law (2002), lay the groundwork for clear roles and responsibilities of the participants in the budget process. However, despite the existence of these documents, there is room for improving the effectiveness of coordination through the introduction of additional mechanisms of interaction, automation of processes and regular joint audits. Recommendations set out in the table emphasise

the need to improve communication between institutions and strengthen their cooperation, which will ensure a more transparent and controlled process of using budget funds. Implementation of these initiatives can significantly improve public budget management, which in turn will increase public confidence in budget processes and contribute to Latvia's sustainable development.

To identify ways to improve Latvia's budget management system, it is important to compare Latvia's budget management systems with the practices of Sweden, Canada and Estonia. These countries were chosen because of their successful experience in developing and implementing effective budget processes that can serve as a benchmark for Latvia (Table 2).

Table 2. Comparison of Latvian budget management systems with successful practices of Sweden, Canada and Estonia in identifying possible improvement ways

Criteria	Latvia	Sweden	Canada	Estonia
Strategic planning	Limited planning with insufficient emphasis on long-term strategy, makes it difficult to anticipate economic changes and formulate stable financial policies	Emphasis on long-term strategic planning, allows the country to adapt to changes and ensure stable economic development	Clear strategic planning for several years ahead with the identification of key priorities, contributes to stability and consistency in the budget process	Clear strategic planning with a focus on digitalisation, can be used to respond quickly to changes in the economy and increase the efficiency of resource management
Integration of results	Different uses of the results, make it difficult to assess the effectiveness of spending and the achievement of goals	Use of performance indicators to assess effectiveness, which allows for evaluation of the impact of budget expenditures on society	High integration of results into the budgeting process, which ensures that expenditures are adjusted based on the results obtained	Systematic use of the results to adjust the budget contributes to increased efficiency and effectiveness of spending
Transparency of the budget process	Limited transparency, causes public distrust and makes it difficult to control expenditures	High transparency and accessibility of information to the public, ensures active participation of the population in the budget process	High transparency, and active public engagement, promote trust in state institutions and government accountability	High transparency through electronic platforms, facilitates access to information and public involvement in decision-making processes
Budget flexibility	Limited adjustment flexibility, rendering rapid economic change adaptation difficult	Flexibility in responding to economic changes, which enables adaptation to new conditions	Flexibility in adjusting the budget depending on needs and circumstances, which ensures efficiency in managing resources	Flexibility in adapting to new economic conditions, which can be used to respond effectively to challenges and changes in the environment
Stakeholder engagement	Minimal involvement of the public and experts limits the effectiveness of the budgeting process	Active involvement of all stakeholders, which ensures that different points of view and interests are considered in the budget process	The wide involvement of the public and experts contributes to more informed decisions	Involvement of stakeholders through consultations, which ensures that their opinions are accounted for in budgeting
Monitoring and evaluation	Insufficient monitoring and evaluation, which makes it difficult to control budget execution and assess the effectiveness of spending	Regular monitoring of policy adjustments, which allows for prompt response to the results and budget amendments	Regular monitoring and real-time evaluation of results, which ensures accurate and timely decision-making	Frequent monitoring and evaluation of performance, which increases transparency and accountability for budget execution

Table 2, Continued

Criteria	Latvia	Sweden	Canada	Estonia
Use of technology	Limited use of the latest technologies in the budget process, reduces management efficiency	Active implementation of electronic systems to simplify data collection and analysis	Employment of the latest technology to collect and analyse data, which increases the efficiency and accuracy of the budget	Intensive use of digital technologies to automate processes, which increases the overall efficiency of budget management
Anti-corruption initiatives	A lack of systemic anti-corruption measures can cause abuse of the budget process	Strict anti-corruption practices ensure a high level of trust in state institutions	Strong anti-corruption measures, and clear reporting to increase transparency and accountability	Strong focus on anti-corruption initiatives, which ensures cost control and prevents abuse
Financial discipline	Unstable financial discipline can lead to cost overruns and deficits	High financial discipline, which ensures cost control and budget sustainability	High financial discipline and cost control, contribute to stability and regularity in the budget process	Strong financial discipline, helps maintain a balanced budget and prevent abuse

Source: compiled by the authors based on Ministry of Finance of the Republic of Latvia (2023), Government Offices of Sweden (2023), J. Shore *et al.* (2024)

A comparison of Latvia's budget management systems with the best practices of Sweden, Canada and Estonia revealed several key areas for improvement. Latvia needs to introduce long-term strategic planning to better anticipate economic changes and adapt the budget to challenges. This includes the development of a set strategy and establishing mechanisms to integrate results into the budget process. Increased transparency of the budget process and active public engagement are critical to building trust in public institutions and ensuring more informed decisions. It is also necessary to ensure greater flexibility in budget adjustments to respond quickly to changes in the economy and the needs of society. Investing in the latest technologies can significantly increase the efficiency of budget management, simplify data collection and analysis, and ensure regular monitoring and evaluation of spending efficiency. The implementation of these successful practices from other countries can significantly improve the budget management system in Latvia, contributing to a more efficient use of public resources for the benefit of society.

Modern challenges in public finance management require governments to adapt to new conditions, including the integration of innovative technologies and increased transparency of budget processes. In this context, recommendations were developed to help optimise budgetary practices and ensure more efficient use of budgetary resources in Latvia.

The introduction of blockchain technologies in the Latvian budget process could be an important step in ensuring transparency and impartiality of budget transactions. The first step in implementing this recommendation is to conduct a detailed analysis of the current budget management system to identify key areas where blockchain can be implemented. It is necessary to develop a technical specification that includes requirements for security, scalability and

integration with existing systems. This will form the basis for further action.

The next step is to form an interagency working group that will include representatives of the Ministry of Finance, information technology and blockchain experts. This group will be responsible for coordinating actions and developing an implementation strategy. Evaluating available platforms and choosing the best one will help ensure the successful integration of the technology.

The development of a prototype blockchain system will be the next stage, which could be used to test the technology in real budget transactions. Pilot projects in selected budgetary institutions or regions will provide an opportunity to evaluate the functionality of the system and collect feedback from users. At the same time, it is necessary to organise training programmes for civil servants to enable them to use the new system effectively. Thus, the introduction of blockchain technologies can significantly improve the budget process in Latvia and ensure national sustainable development.

The integration of electronic payment systems in the Latvian public sector is needed to improve the efficiency of public financial management and reduce the risk of corruption. To start implementing this recommendation, it is necessary to develop a single platform for electronic payments that will allow all financial transactions to be consolidated in one place. This will simplify payment processing, reduce the time required to complete financial transactions and increase their transparency.

To successfully implement this system, a detailed analysis of the needs of various government agencies and stakeholders is required. The involvement of experts in the field of information technology and finance will help determine the key requirements for the platform, such as security, usability and the ability to integrate with existing

accounting systems. It is also necessary to account for the needs of users so that the platform is understandable and accessible to all stakeholders. The next step is to select a technology solution provider to develop the electronic payment platform. It is necessary to hold an open tender to attract the best specialists and technology. Once the supplier is selected, a pilot project should be organised to test the system in real-world conditions. This could be used to identify shortcomings and make the necessary adjustments before the full launch.

In addition, regular monitoring of the platform's effectiveness after its implementation will provide timely identification of problems and improvements. Public information campaigns will raise awareness of the new platform and its benefits, which in turn will strengthen trust in public finances. Thus, the integration of electronic payment systems will be an important step towards increasing the transparency and efficiency of the budget process in Latvia.

The use of mobile applications for accessing budget and expenditure information is a tool for engaging citizens in the public finance management process in Latvia. The creation of such applications will simplify the access to information on the budget, expenditures and projects, increasing the transparency and openness of the budget process. The first step in implementing this recommendation is to conduct a needs analysis of citizens and identify key functions that should be included in mobile applications.

User experience research and collection of feedback from potential users can be used to determine what information is most important to citizens. This may include details on spending on social programmes and infrastructure projects, as well as the ability to receive notifications of budget changes. The involvement of information technology specialists will help to develop intuitive interfaces that will make the apps easy to use. After the launch of mobile applications, it is necessary to organise information campaigns to raise public awareness of their capabilities. This will help attract more users and encourage active participation of the population in the budget discussion process. The use of such applications can be an important step in improving communication between the government and citizens, ensuring openness and transparency of budget expenditures. Thus, mobile applications will become effective for engaging the public in budget discussions and raising awareness of financial processes in the country.

The use of artificial intelligence to forecast budgetary needs opens new opportunities for improving public finance management in Latvia. The introduction of such systems will allow for more efficient analysis of large amounts of data and accurate forecasts of financial needs in various sectors.

The first step is to assess existing data and systems to identify gaps in budget planning. The next step is a selection of algorithms and artificial intelligence models adapted to the specifics of the process. Collaboration with data analysts will help create systems for analysing historical data, identifying trends and forecasting financial needs, considering socio-economic factors.

Once the system is developed, its effectiveness should be tested on real data through pilot projects. At the same time, training should be organised for civil servants to ensure that they are ready to work with new technologies. The introduction of artificial intelligence will improve the accuracy of forecasting and allow for more efficient prioritisation of funding, which will have a positive impact on the implementation of government programmes. Regular monitoring and analysis of data will help improve forecasting algorithms, which will contribute to the sustainable development of the budget process in Latvia. Thus, the integration of artificial intelligence will be an important step towards ensuring the transparency and efficiency of budget management.

The creation of an online platform for public control is an important step in ensuring the transparency of the budget process in Latvia. The interactive platform will allow citizens to monitor the implementation of the budget, submit requests for information and receive answers to their questions. This will increase public confidence in state institutions and improve control over the use of budget funds.

The first step in implementing this initiative is a survey, designed to identify the needs of the public and define the functionality of the platform. The involvement of information technology and civil society experts will help to create a platform that is user-friendly and understandable. The interface of the platform should be intuitive and the information easy to comprehend, which will ensure easy access to budget data.

The next stage will be the development of the platform itself, which should integrate existing budget accounting systems and ensure automated data collection and processing. This will enable the creation of up-to-date reports on budget execution that citizens can view in real-time. In addition, the platform should include functions for submitting requests for information and receiving responses, which will simplify communication between government agencies and citizens. Once the platform is developed, it should be tested among the target audience to identify shortcomings and make adjustments. It is also necessary to organise information campaigns that will explain the platform's capabilities to the public and encourage their active participation. Regular monitoring of the platform's operation will help assess its effectiveness and adapt its functionality to the changing needs of users. Thus, the creation of an online platform for public control will be an important tool for engaging the population in the budget process. This will raise public awareness, increase their participation in controlling the spending of public funds and strengthen the democratic principles of financial management in the country.

In addition, a partnership with the private sector, especially with information technology companies, was proposed to introduce new technologies in the Latvian budget management. This cooperation would enable the adaptation of innovative solutions to the needs of the state budget, increasing the efficiency and transparency of financial processes. The first step is to identify key information technology companies with experience in the public sector, which

can be done through open tenders and pitching. A clear definition of the goals and roles of both parties will ensure transparency and accountability. This will be followed by the joint development of technological solutions, such as automated budget planning and analytical platforms for monitoring expenditures. The involvement of private sector experts will provide public institutions with access to modern technologies, which will help improve budget management. Regular monitoring and evaluation of the results of cooperation will help to identify the effectiveness of the implemented solutions. An open dialogue between government agencies and private partners will allow for a prompt response to challenges. Thus, partnerships with the private sector will become an important tool for integrating new technologies into budget management, increasing transparency, efficiency and accountability in public finance.

Discussion

Analysing of existing budget systems and implementing new reform strategies would allow not only to assess the effectiveness of public financial management but also to identify best practices and strategies that can be adapted to increase the transparency and efficiency of budget processes. This analysis reflects the growing interest of scholars in researching state budget and budgeting issues aimed at achieving effective and transparent public financial management.

O. Blanchard *et al.* (2021), Y.N. Basa (2023) and C. Axoglou *et al.* (2023) analysed the legal framework of the budget procedure in Turkey, proposals for replacing the EU fiscal rules with fiscal standards, and the role of Independent Fiscal Institutions (IFIs) in the EU as well as ways to strengthen them. An analysis of budgetary procedures in Turkey demonstrated that the basic rules are defined at the constitutional level, with key principles enshrined Constitution of the Republic of Turkey (2019). The detailed rules are regulated by the Law of the Republic of Turkey No. 5018 "On Public Financial Management and Control" (2013), which ensures the legality of budget preparation, execution and control, forming the legal basis for the state budget and judicial control over fiscal actions. The study also noted that the EU has suspended its fiscal rules until the end of 2021, which creates a need for changes due to the high level of debt. National independent fiscal councils and the European Commission should have an important role in this process, and disputes should be resolved through the European Court of Justice. According to the analysis, since the introduction of EU legislation in response to the financial crisis, the number of IFIs has increased significantly and they have taken on a variety of functions. This provides a useful basis for proposals for reforming the economic governance system in the EU. It is found that the basic rules of the budget procedure are enshrined at the constitutional level, which ensures the legality of budget execution, and the growth in the number of IFIs is noted, which requires clarification of their tasks and guarantees of independence. These results of the study coincide with the conclusions about the importance of the legal framework and

independence of fiscal institutions for the stability of the budget process, which is also relevant in the context of improving the state budget system in Latvia. At the same time, there are some nuances in the specifics of the implementation of fiscal standards and control mechanisms that require further analysis in each country.

O. Speian (2022), J. Zhang (2022), and A. Sanchez-Bayon *et al.* (2023) covered various aspects of budget systems and financial management, in particular, focusing on the importance of effective fiscal strategies for ensuring economic stability. They also analysed the impact of budgetary practices on the economic development of countries, in the context of global challenges such as the financial crisis and the COVID-19 pandemic. While analysing the sources of financing the budget deficit in the context of the growing deficit caused by the COVID-19 pandemic, they focused on domestic sources, in particular government securities. Furthermore, the development of public debt in several countries, including the Republic of Moldova, was analysed, and the expansion of the government securities market was noted to be crucial for ensuring stable financing of the state budget in the medium and long term. The review of fiscal revenues in China focuses on the assessment of the share of fiscal revenues in gross domestic product (GDP) and the fiscal expenditure multiplier as key indicators of economic efficiency. Moreover, the review of the EU's budgetary system, based on the analysis of more than 700 indicators of financial programmes for the period 2014-2020, showed how countries with less economic resources benefit, while Germany is the main beneficiary, thereby highlighting the need for investment in sustainable production to improve economic integration in the EU, indicating the importance of balanced development of budgetary systems to ensure long-term economic stability. Thus, the research findings highlight the importance of domestic sources of financing for the stability of budgetary systems, as well as the need for effective fiscal strategies. This correlates with the study results, which highlight the importance of adapting budgetary practices to achieve economic stability, especially in the face of global challenges such as financial crises and pandemics. The emphasis on investments in sustainable development and optimisation of budget expenditures also corresponds to the recommendations for improving the state budget system.

However, there is a discrepancy in the results of studies by Y. Bitoleuova *et al.* (2020) and A. Nurgaliyeva *et al.* (2022) due to differences in the aspects of implementation of these strategies, in the methods of assessing the effectiveness of budget expenditures and control mechanisms, which indicates the need to adapt methodologies to the specific conditions and challenges faced by Latvia. When considering the possibility of introducing a budgeting system in international organisations, it was found that budgeting contributes to improving the efficiency of departments through planning and controlling financial flows. In addition, the development of local self-government in Kazakhstan was analysed, focusing on the approach of

financial independence of bodies through the introduction of an independent budget. The study determined that this approach helps to increase the responsibility of authorities for the use of financial resources and improves their ability to respond to the needs of local communities. The study of international experience has shown that a systematic approach to the budget process, particularly the introduction of programme-targeted planning models, allows for more efficient resource allocation and stimulates economic development at the local level.

Studies by J. Diamond (2006), C.E. Lucia *et al.* (2021), and I.A. Lovering (2021) analysed and identified different approaches to reforming budget systems, studied the impact of budgetary practices on economic development and explored mechanisms to improve the efficiency of public financial management in the face of global challenges. In addition, a strategy for reforming budget systems is defined, which includes increasing the flexibility of the operating environment, providing resources for budgetary institutions and creating pressure to improve performance. Budget revenues of Romania for 2019-2021 were analysed, showing the evolution of expenditures and the reasons for their distribution by functional categories, and the impact of various factors on changes in budget revenues and the efficiency of public institutions during this period is assessed. The transition from "government" to "governance" since the 1990s is also examined, with a focus on the construction of public authorities at the supranational and local levels. European integration in the 1990s serves as an example, where the creation of the EU facilitated the integration of markets without a common budget. Member states coordinated policies through rules and quantitative comparative exercises. These findings are consistent with approaches to reforming the budget system, improving public financial management, and identifying strategies that include increasing the flexibility of the operating environment and securing resources. Analysing changes in expenditures and their distribution by functional category is also key to assessing the impact on budget revenues and the efficiency of public institutions.

However, the analysis of the impact of budgetary efficiency on economic growth, as well as consideration of the realities and illusions of the new public administration, together with ways to improve financial control over the use of public funds, are key aspects that emphasise the importance of effective financial management to stimulate economic development, and were therefore considered in more detail by W. Putra (2021), S.G. Mauro *et al.* (2021), as well as Z.K. Jumayeva & G.N. Mamadjonov (2024). The authors addressed the capabilities of regions in West Kalimantan to ensure budgetary efficiency and analysed the relationship between expenditures and revenues. The results confirmed the existence of a positive relationship between expenditures and primary local revenues, as well as between budgetary efficiency and the growth of gross regional domestic income. The article also analyses the case of an Italian ministry, which revealed the difficulties of

integrating values and goals between different organisational actors, which complicates the establishment of causal relationships and threatens the success of reforms in the budget process because actors remain within illusory models. In addition, the importance of efficient use of state budget funds and opportunities to improve financial control is emphasised, as proper financial control can significantly affect the management of budget resources and increase the overall efficiency of the budget system. The importance of integrating effective management practices, proper financial control and the relationship between budget expenditures and revenues is key to improving the state budget system in Latvia and coincides with the results of the study. This underscores the need to create mechanisms that ensure sustainable economic development and increase the efficiency of public finances. As part of the optimisation of the state budget mechanisms, new recommendations have been developed to integrate new technologies and improve the transparency of budget processes.

The results of the study coincide with those of A.J. Mokhtari (2019) and G. Citroni *et al.* (2019), since the study developed recommendations for the budget process, including improved methods of analysing financial data and mechanisms for assessing the efficiency of using budget resources, it is worth focusing on their implementation. The recommendations emphasise the need to integrate good management practices and proper financial control to ensure the sustainability of budget systems. Whereas defence financing emphasises the importance of army expenditures in the state budget, stressing that effective planning and rational use of resources in the budget is necessary to maintain the high readiness of budget managers to perform tasks. In turn, the analysis of Algeria's budget revealed that dependence on oil revenues has significantly affected the country's fiscal policy, in particular, in the context of the oil shock, austerity policies have been implemented since 2014, which stabilised the budget balance by reducing public spending. Analysing the austerity in Italy, it was noted that in response to the economic downturn in 2010, the implemented rationalisation programme led to a reduction in the autonomy of local authorities and changes in public service management strategies, including a shift to less costly models.

A correlation with the studies by R. Downes & S. Nicol (2020), D. Valle-Cruz *et al.* (2022) and L. Bartocci *et al.* (2023), who emphasise the importance of integrating public participation into budget processes, implementing gender budgeting and using modern technologies such as artificial intelligence to improve the efficiency of public spending, was also determined. This highlights common trends in the search for new approaches to budget management to increase transparency, equity and cost-effectiveness. Through a systematic review of the literature on participatory budgeting, analysing 139 articles published between 1989 and 2019, a conceptual model was developed to address the challenges faced at different stages of state budget implementation, as well as to identify new

directions for implementing participatory mechanisms that may be useful for practitioners. In turn, gender budgeting emphasises the need to integrate gender equality into fiscal policy, offering recommendations for implementing this approach, which can contribute to social justice and inclusive economic development (Larikova, 2022). The analysis focusing on the use of artificial intelligence in public budgeting examined how algorithmic methods can improve the allocation of public spending. The use of a genetic algorithm makes it possible to efficiently process large amounts of data, identifying complex nonlinear relationships in budget expenditures. This can significantly improve the decision-making process in the budgetary sphere, contributing to GDP growth, lower inflation, and an improved Gini index.

An analysis of research on improving the state budget for informed decision-making in Latvia shows that the integration of effective management practices, proper financial control and a clear relationship between revenues and expenditures is key to ensuring financial stability. The creation of new mechanisms to support the budgeting process is recognised as important at all levels of government. However, rather than the traditional approach that treats these elements separately, the recommendations developed in this paper integrate all these factors into a single framework that allows for more in-depth analysis and evaluation of the effectiveness of budgetary decisions.

Conclusions

The study of the Latvian state budget system by analysing budget revenues and expenditures for the period from 2019 to August 2024 revealed a steady increase in revenues, although a slight decrease was recorded in 2020 due to the COVID-19 pandemic. Expenditures also tended to increase, particularly in 2020, which may be a result of the need to support the economy. The increase in the budget deficit points to the need to optimise expenditures and improve the efficiency of the use of budgetary resources. Overall, the results indicate the need to review consolidation mechanisms and increase coordination between public institutions to ensure stable and effective financial management in Latvia.

In turn, a revision of the legal framework governing this interaction in Latvia was conducted to identify the coordination between state institutions for effective budget management, showing that there are structured mechanisms that define the roles and responsibilities of the participants in the budget process. Basic documents, such as the Constitution and the laws on budget and financial management, lay the foundations for joint work. However,

there is room for improvement through the introduction of additional mechanisms of interaction, automation of processes and regular joint audits. Recommendations to improve communication and cooperation between institutions could lead to a more transparent and controlled use of budget funds, which in turn would increase public trust and contribute to Latvia's sustainable development.

Comparison of Latvia's budget management system with the systems of other countries, including Sweden, Canada and Estonia, revealed several key areas for improvement. Latvia should introduce long-term strategic planning, following the example of Sweden, and integrate results into the budget process, as in Canada, which would allow for better adaptation to economic changes. Increasing transparency and public engagement, following the example of Estonia, will help build trust in public institutions. Implementation of these practices could significantly improve public budget management in Latvia, contributing to a more efficient use of resources for the benefit of society.

Based on the results, recommendations were developed, including the introduction of innovative technologies such as blockchain, electronic payments, mobile applications and artificial intelligence. These technologies are essential for improving public financial management in Latvia. Adapting to modern challenges requires a detailed analysis of existing systems and the creation of new solutions that will ensure transparency, and efficiency and reduce the risk of corruption. It is also important to establish partnerships with the private sector, especially with information technology companies, which will allow to attract experts and modern technologies to implement these initiatives. The key steps include the formation of working groups, pilot projects, training of civil servants and active involvement of the public through online platforms, which will help to increase trust in state institutions and ensure the sustainable development of the budget process in the country. The key areas for further research in improving the state budget system in Latvia could be to study the role of new technologies, such as big data analysis and artificial intelligence, in the budget planning and execution processes. This could be used to assess how such tools can improve the efficiency of financial management and the validity of decisions.

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Conflict of Interest

None.

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Анотація. Метою дослідження було вдосконалення системи державного бюджету для забезпечення прийняття обґрунтованих рішень, що сприятиме більш ефективному використанню бюджетних коштів та підвищенню фінансової стабільності країни. Проведено порівняльний аналіз успішних практик бюджетного планування в інших країнах, таких як Швеція, Канада та Естонія, а також розглянуто правові засади координації між державними установами в процесі управління бюджетом у Латвії. Методологічний підхід ґрунтувався на аналізі статистичних даних з офіційних джерел та нормативно-правових актів, а також на використанні інформації з урядових та міністерських веб-сайтів. Результати дослідження показали, що аналіз доходів і видатків державного бюджету Латвії за період з 2019 року по серпень 2024 року виявив стабільне зростання доходів, за винятком спаду у 2020 році через пандемію, та збільшення видатків, що потребує оптимізації та кращої координації між державними органами. Дослідження визначило, що існуюча законодавча база Латвії, яка регулює координацію між державними установами в управлінні бюджетом, потребує вдосконалення з метою підвищення ефективності цієї взаємодії. Порівняння системи управління бюджетом Латвії з успішними практиками Швеції, Канади та Естонії продемонструвало потенціал для вдосконалення управління шляхом запровадження довгострокового стратегічного планування, як у Швеції, інтеграції результатів у бюджетний процес, як у Канаді, та підвищення прозорості й залучення громадськості, як в Естонії. На основі отриманих даних були розроблені рекомендації щодо інтеграції нових технологій у бюджетний процес та підвищення прозорості, що сприятиме більш ефективному використанню державних ресурсів. Отримані результати свідчать про необхідність реформування системи державного бюджету для забезпечення прийняття обґрунтованих рішень у Латвії. Це дозволить більш раціонально використовувати бюджетні кошти, підвищити прозорість фінансових процесів і зміцнити довіру громадськості до урядових рішень.

Ключові слова: фінансовий менеджмент; інноваційні технології; міжнародний досвід; аудит; оцінка ефективності
