UDC: 005.334:351(497.11)
005.334:351(497.5)
COBISS.SR-ID 198454537
doi: https://doi.org/10.61837/mbuir040126041m

**Original scientific paper**

Received: 27. 4. 2026.
Accepted: 19. 5. 2026.

# RISK MANAGEMENT IN THE PUBLIC SECTOR OF SERBIA AND CROATIA: A COMPARATIVE ANALYSIS OF FORMAL AND PROCESS MATURITY

**Snežana MAKSIMOVIĆ**

*MB University, Faculty of Business and Law, Belgrade, Serbia*

galena.mcl@gmail.com
https://orcid.org/0000-0001-9928-1292

**Goran BABIĆ**

*MB University, Faculty of Business and Law, Belgrade, Serbia*

goranbabic91@gmail.com
https://orcid.org/0009-0000-9857-3429

**Miroslava JEVTIĆ**

*NLB Komercijalna banka*

jevticmira94@gmail.com

***Abstract:*** *Risk management in the public sectors of Serbia and Croatia is examined by distinguishing between the formal establishment of risk management instruments and their process maturity in practical application. It starts from the assumption that the existence of strategies, guidelines, risk registers and reporting templates represents an important, but not sufficient, condition for effective risk management. The actual maturity of the system is reflected in whether these instruments are used in planning, decision-making, monitoring of weaknesses, implementation of corrective measures and assessment of remaining, or residual, risk. The aim of the research is to compare the available indicators of risk management development in the public sectors of Serbia and Croatia, with particular emphasis on the difference between formally established instruments and their process usability. The methodology is based on a comparative analysis of official reports, guidelines and publicly available documents relevant to financial management, internal control and risk management. In the case of Serbia, the analysis focuses on direct quantitative indicators, such as the adoption of risk management strategies, preparation of risk registers and use of risk management guidelines. In the case of Croatia, the analysis focuses on process indicators, including the Statement of Fiscal Responsibility, the Fiscal Responsibility Questionnaire, identified weaknesses in internal controls, internal audit opinions and activities aimed at developing integrated risk management. The expected contribution of the paper lies in a clearer understanding of the relationship between formal institutionalisation and the practical use of risk management as an instrument of managerial accountability, more efficient use of public resources and improved public governance.*

***Keywords:*** *risk management; public sector; risk register; residual risk; internal controls; formal maturity; process maturity*

## 1. INTRODUCTION

The efficiency of the public sector largely depends on the ability of institutions to achieve their objectives while using resources rationally, complying with regulations, ensuring transparency, and maintaining accountability to citizens. In such an institutional environment, risk management represents one of the key elements of financial management and control [11], as it enables potential threats to be identified, assessed, treated, and monitored in a timely manner. Its purpose is not merely to avoid undesirable events, but also to provide a basis for better managerial decision-making, more effective allocation of control activities, and the strengthening of managerial accountability[3].

In practice, however, public institutions often face a gap between the formal establishment of risk management systems and their actual process maturity. Formal maturity refers to the existence of prescribed documents, strategies, guidelines, risk registers, and reporting templates. Process maturity, on the other hand, refers to the extent to which these instruments are genuinely integrated into management processes, planning, decision-making, monitoring of measures, and reporting on results. This distinction represents the starting point of this paper.

The way in which risks are documented and monitored is of particular importance. The risk register, as one of the main instruments of risk management, should not be understood merely as a formal list of potential threats, but as a working management document that links objectives, processes, risks, existing controls, planned measures, responsible persons, deadlines, and implementation status[16]. Its value lies in enabling management to determine which risks are the most significant, where existing controls are insufficient, which measures should be undertaken, and whether the remaining level of risk is acceptable after those measures have been implemented.

In this context, the distinction between inherent and residual risk is especially important. Inherent risk refers to the initial level of exposure before the application of controls and measures, while residual risk represents the remaining level of risk after existing controls and planned activities have been taken into account[22]. If residual risk is not clearly documented, risk management may remain at the level of an administrative obligation, without providing a clear insight into whether controls and measures have actually contributed to reducing risk exposure.

The subject of this paper is risk management in the public sectors of Serbia and Croatia, with particular emphasis on the formal and process maturity of methodological and reporting mechanisms. The selection of Serbia and Croatia is based on their regional and institutional comparability, as well as on the fact that both countries are developing systems of internal control and public internal financial control in line with European principles, the COSO framework, and the concept of managerial accountability [6][4][5]. At the same time, publicly available documents indicate different ways of monitoring and presenting the development of these systems. In Serbia, direct indicators are available regarding the adoption of risk management strategies, the preparation of risk registers, and the use of guidelines[15]. In Croatia, the state of the system is assessed more through the Statement of Fiscal Responsibility, the Fiscal Responsibility Questionnaire, plans for eliminating weaknesses, internal audit opinions, and activities aimed at introducing integrated risk management[13].

The aim of the research is to compare the key elements of risk management in the public sectors of Serbia and Croatia, focusing on the difference between formally established instruments and their process usability. The research seeks to determine the extent to which available documents and reporting mechanisms provide insight into the maturity of risk management, the documentation of risks, the monitoring of weaknesses, the planning of corrective measures, and the connection between risk management and managerial decision-making.

Accordingly, the paper is based on the following research questions:

- What are the key indicators of the formal establishment of risk management in the public sector of Serbia?
- How are weaknesses and risk areas in Croatia's internal control system identified through the mechanisms of fiscal responsibility, self-assessment, and internal audit?
- To what extent can a transition be observed in the analysed systems from the formal documentation of risks towards the process integration of risk management into planning, control, and decision-making?
- What are the similarities, differences, and limitations of the available indicators for assessing the maturity of risk management in Serbia and Croatia?

Methodologically, the paper is based on a comparative analysis of publicly available official documents, reports, guidelines, and templates relevant to financial management, internal control, and risk management. The analysis is carried out using a criteria-based instrument that includes two groups of indicators: indicators of formal maturity and indicators of process maturity. Indicators of formal maturity refer to the existence of a risk management strategy, risk register, guidelines, and reporting templates. Indicators of process maturity refer to the monitoring of weaknesses, planning and implementation of measures, involvement of internal audit, follow-up of recommendations, status of eliminating irregularities, and the integration of risk management into management processes.

The expected contribution of the paper lies in providing a clearer distinction between formal and process maturity of risk management in the public sector. The paper argues that the mere existence of a strategy or risk register is not sufficient for assessing the actual maturity of the system. It is also necessary to analyse whether risks are monitored, whether measures are implemented, whether responsibility for action is clearly assigned, and whether results are used in managerial decision-making. In this way, the research may contribute to a better understanding of how risk management in the public sector can evolve from a formal obligation into a practical instrument of managerial accountability and improved public governance.

## 2. FORMAL AND PROCESS CONDITIONS FOR EFFECTIVE RISK MANAGEMENT IN THE PUBLIC SECTOR

Effective risk management requires more than the formal existence of procedures, registers, or reporting templates. It is based on a clear connection between institutional objectives, identified risks, existing controls, planned measures, and continuous monitoring. Risk should therefore be understood not only as a potential threat, but also as a managerial category linked to decision-making under uncertainty [22]. In this sense, risk management enables public sector institutions to anticipate events that may prevent the achievement of objectives, but also to identify opportunities for improving performance, efficiency, and accountability [2].

A fundamental precondition for risk assessment is the clear definition of objectives. If institutional objectives are not clearly formulated, it is difficult to determine which events may threaten their achievement and how significant those events may be. Risk assessment is therefore meaningful only when risks are analysed in relation to objectives, processes, resources, and expected results[20]. In this context, the impact of a risk represents the possible consequence for the achievement of objectives, while likelihood indicates the probability that the risk will materialise. The combination of these two dimensions enables institutions to rank risks and focus resources on those areas where exposure is the greatest.

Another important condition for effective risk management is the existence of appropriate controls. Controls reduce uncertainty and help keep risks within an acceptable level. However, controls should not be understood as an end in themselves. Excessive or poorly

designed controls may slow down processes and reduce organisational efficiency, while insufficient controls may leave institutions exposed to unacceptable levels of risk [19]. For that reason, risk management requires a balanced approach: controls should be proportionate, purposeful, and directed towards the most significant risks[10].

The distinction between inherent and residual risk is particularly important for assessing the maturity of a risk management system. Inherent risk refers to the level of exposure before controls are applied, while residual risk refers to the level of exposure that remains after controls and risk treatment measures have been implemented [5]. This relationship may be expressed through the basic logic that inherent risk, reduced by controls, results in residual risk. Therefore, a mature risk management system should not only identify and assess risks, but also show whether existing controls and planned measures actually reduce exposure to an acceptable level[6].

The risk register has a central role in this process. It serves as a structured document that records the results of risk identification, assessment, treatment, and monitoring. A well-designed risk register should include the description of the risk, the objective or process to which it relates, the assessment of likelihood and impact, existing controls, planned measures, responsible persons, deadlines, implementation status, and the level of residual risk[16]. In this way, the register becomes more than an administrative form; it becomes a managerial tool that supports accountability, prioritisation, and follow-up [8].

A further process condition is the regular updating of the risk register. Risks change as objectives, regulations, organisational structures, personnel, information systems, technologies, and external conditions change. For this reason, risk management cannot be reduced to a one-time exercise. It must be embedded in regular planning, monitoring, reporting, and internal review. A system that only records risks once, without reviewing changes in exposure or the effectiveness of controls, remains formally established but processually weak[10].

Finally, internal audit has an important role in strengthening risk management maturity. By assessing internal controls, reviewing risk management processes, and providing assurance and recommendations, internal audit contributes to the reliability of the system. Its role is not to take over managerial responsibility for risks, but to provide independent insight into whether the risk management process is adequately designed and effectively implemented [22]. This is especially important in the public sector, where risk management is closely connected with legality, efficiency, accountability, and the responsible use of public resources.

### 2.1. Integrating risk management into public sector governance and decision-making

Effective risk management in the public sector requires more than the formal adoption of risk policies and reporting templates. It depends on the extent to which risk management is embedded in regular institutional processes, policy design, programme implementation and managerial decision-making [21]. Public sector organisations are expected to understand not only their formal responsibilities, but also the risks that may prevent them from achieving policy and organisational outcomes. In this sense, risk management should be treated as a continuous managerial process rather than as an isolated compliance exercise.

A process-oriented approach requires several institutional conditions[14]: the existence of a risk management policy and framework, clearly defined responsibility for managing risk, systematic integration of risk management into business processes, a positive risk culture, communication and consultation about risks, management of shared risks, maintenance of risk management capability, and regular review and continuous improvement of the system. These elements show that the maturity of risk management cannot be assessed only by the existence of formal documents, but also by the way in which risks are

understood, communicated, monitored and used in decision-making.

The logic of a process-oriented approach can also be illustrated through risk-based compliance models. Such models show that institutional responses should be proportionate to the assessed level of risk and behaviour of regulated or controlled actors. Where actors are willing to comply, the appropriate institutional response is to make compliance easier and provide support[1]. Where actors are unwilling or deliberately refuse to comply, stronger detection and enforcement mechanisms are required[1]. This illustrates an important feature of mature risk management: controls and corrective actions should not be applied uniformly, but should be adjusted according to the level and nature of risk.

In the context of public sector governance, this model supports the distinction between formal and process maturity. A formally established system may contain policies, registers and templates, while a process-mature system [9] uses risk assessment results to prioritise controls, differentiate institutional responses, allocate resources and monitor the effectiveness of measures.

This distinction is particularly relevant for public sector organisations, where risks are often linked not only to financial loss, but also to legality, service delivery, public trust, integrity, policy implementation and the efficient use of public resources. Therefore, the quality of risk management should be assessed through both dimensions: the existence of formal instruments and the extent to which those instruments influence managerial behaviour and decision-making. A risk register, for example, has limited value if it is prepared only to satisfy reporting requirements. Its practical value depends on whether it is regularly updated, whether risk owners are clearly identified, whether mitigation measures are monitored, and whether the information it contains is used to guide institutional priorities.

Consequently, effective risk management in the public sector requires a shift from a compliance-based approach to a management-based approach. The compliance-based approach focuses primarily on whether required documents exist, while the management-based approach examines whether risk information is used to improve planning, strengthen controls, prevent weaknesses and support accountability[18]. This shift is essential for transforming risk management from a formal administrative obligation into a practical tool of public governance.

## 3. THE RISK REGISTER AS A TOOL FOR EFFECTIVE MANAGEMENT IN THE PUBLIC SECTOR

The risk register represents one of the key formal instruments of risk management in the public sector. It is a structured document or database in which identified risks are recorded, assessed, assigned to responsible persons and monitored over time[16]. Its purpose is not only to provide a list of potential threats, but to create a systematic basis for managing risks that may affect the achievement of institutional objectives, the implementation of public policies, the use of public resources and the quality of service delivery. In this sense, the risk register is closely connected with the broader understanding of risk management as a structured process that supports decision-making, accountability and the achievement of organisational objectives [8][5].

In an effective risk management system, the risk register links institutional objectives with specific risks, existing controls, planned mitigation measures, deadlines, responsible persons and the status of implementation[7]. In this way, it enables management to identify which risks are most significant, where controls are insufficient, which measures should be prioritised and whether the remaining level of risk is acceptable. This is particularly important because risk management should not be reduced to the identification of risks alone, but should include assessment, treatment, monitoring and review as continuous phases of the management process [8]. Therefore, the risk register should be understood as a managerial tool, not merely as a reporting template or administrative obligation.

The importance of a risk register lies in its ability to support proactive management. By identifying and assessing risks at an early stage, public sector institutions can anticipate potential weaknesses, allocate resources more efficiently and take preventive or corrective measures before problems escalate. This is particularly important in the public sector, where risks may affect legality, budget execution, procurement, service delivery, public trust and institutional accountability. INTOSAI [7] emphasises that internal control systems in the public sector should provide reasonable assurance that public resources are used economically, efficiently, effectively and in accordance with regulations. In that context, a well-maintained risk register strengthens transparency because it creates a documented trail of identified risks, planned responses and the progress of implementation.

For the risk register to be effective, it must be regularly updated and integrated into planning, monitoring and reporting processes. A register that is prepared once and not subsequently reviewed has limited practical value. Its usefulness depends on whether risk owners are clearly assigned, whether mitigation measures are realistic, whether deadlines are monitored and whether changes in risk exposure are recorded. Literature on risk registers also emphasises that they should be iterative, flexible and adapted to new information, changing circumstances and organisational priorities [10]. In this sense, the quality of the risk register is directly linked to the process maturity of the risk management system.

In addition, a risk register should be fit for purpose, meaning that its structure, methodology and criteria should correspond to the objectives of the institution, the nature of its processes, management needs and the regulatory environment in which it operates.

The development of risk registers [10] should be guided by several important principles, including purposefulness, flexibility, systems-level understanding, transparency, consistency, repeatability and interoperability. Although these principles are discussed in the context of public health emergency management[12], they are also relevant for public sector risk management more broadly, because they show that a risk register should support evidence-based, comparable and auditable decision-making[4].

The register should also enable a clear distinction between inherent and residual risk. Inherent risk refers to the level of exposure before controls are applied, while residual risk represents the level of exposure that remains after existing controls and planned mitigation measures have been taken into account. This distinction is essential because it allows management to assess whether controls are effective and whether the remaining risk is acceptable. Within internal auditing and risk-based control[19], risk registers may be used as evidence of risk identification, assessment and management decisions, while the relationship between inherent risk, controls and residual risk provides a practical basis for evaluating the effectiveness of the control system.

In the context of this paper, the risk register is particularly relevant for distinguishing between formal and process maturity. Formal maturity is reflected in the existence of a prescribed register, standardised templates and methodological guidelines. Process maturity, however, is reflected in the actual use of the register for decision-making, prioritisation of controls, monitoring of mitigation measures and assessment of residual risk. Therefore, the existence of a risk register is only the starting point; its real value depends on whether it functions as an active instrument of managerial accountability and effective public governance.

## 4. COMPARATIVE RESEARCH CONTEXT: FORMAL AND PROCESS MATURITY IN SERBIA AND CROATIA

This section presents the comparative research context for analysing risk management maturity in the public sectors of Serbia and Croatia. The two cases are regionally and institutionally comparable, as both systems have developed within the broader framework of public internal financial control, financial

management and control, internal audit, and managerial accountability. At the same time, the publicly available documents show different approaches to reporting and monitoring the development of risk management.

Serbia provides more direct indicators of formal maturity, such as the adoption of risk management strategies, preparation of risk registers and use of risk management guidelines. Croatia, on the other hand, provides stronger insight into process maturity through the fiscal responsibility framework, self-assessment mechanisms, identification of weaknesses, internal audit opinions and the ongoing transition toward integrated risk management.

### 4.1. Serbia: Formal Indicators of Risk Management Maturity

In the case of Serbia, the available official documentation provides relatively clear quantitative indicators of the formal establishment of risk management in the public sector. The Consolidated Annual Report [15]on the State of Public Internal Financial Control in the Public Sector of the Republic of Serbia for 2024 is based on the annual reports submitted by public funds users and provides data on the development of financial management and control, internal audit and related risk management instruments.

A significant basis for assessing the state of the system is the number of submitted financial management and control reports. For 2024, a total of 4,890 [15] public funds users submitted reports, which represents a broad reporting base for analysing the formal development of internal control and risk management mechanisms in the Serbian public sector. The report [15] also notes that the most important public sector institutions submitted their reports, which increases the relevance of the findings for assessing the overall state of the system.

The key formal indicators of risk management maturity in Serbia are the adoption of risk management strategies, the preparation of risk registers and the use of risk management guidelines. According to the 2024 report[15], 71.34% of all public funds users adopted a risk management strategy, while 58.27% prepared a risk register. The difference between these two indicators suggests that the strategic framework of risk management is more developed than its operational documentation. In other words, a larger number of institutions have adopted a formal strategic document, while a smaller number have translated that framework into a structured register that enables the systematic recording, assessment and monitoring of risks.

The data also show relatively balanced results between the central and local levels. At the central level[15], 71.12% of public funds users adopted a risk management strategy and 56.81% prepared a risk register. At the local level, the corresponding figures are[15] 71.61% for risk management strategies and 59.76% for risk registers. These results indicate that there is no substantial difference between the two levels in terms of formal maturity, although the local level shows slightly better results in the preparation of risk registers.

More significant differences are visible when individual categories of public funds users are analysed. Organisations of compulsory social insurance show the highest level of formal maturity[15], with 100% of organisations having both a risk management strategy and a risk register. Ministries with administrative bodies within their structure also show relatively high results[15]: 85.71% have adopted a risk management strategy and 81.63% have prepared a risk register. These findings indicate that key central-level institutions have made greater progress in formally establishing risk management instruments.

At the same time, the results are weaker in some other categories. Enterprises owned by the Republic of Serbia recorded [15] 63.83% for the adoption of risk management strategies and 62.77% for the preparation of risk registers. Although these two indicators are relatively balanced, they suggest that further strengthening of formal risk management tools is still needed in this segment of the public sector. At the local level, direct budget users achieved

relatively high results, with 89.25% having adopted a risk management strategy and 77.42% having prepared a risk register[15].

The development trend is also relevant for assessing formal maturity. In the period 2023–2024, the largest progress among all public funds users was recorded in the adoption of risk management strategies[15], with an increase of 8.75%, and in the preparation of risk registers, with an increase of 9.86%. Among priority public funds users, the increase was 9.30% [15]for risk management strategies and 10.00% for risk registers[15]. This indicates that risk management tools are becoming more widely institutionalised, particularly among categories considered especially important for the functioning of the public sector.

However, formal progress does not necessarily imply full process maturity. The Serbian report[15] explicitly states that the risk assessment component remains weak and that risk documentation, including risk management strategies and risk registers, is still not at a satisfactory level. It also notes that control activities for risk mitigation, responsibilities for their implementation, as well as monitoring and updating, remain insufficiently developed. At the same time, the use of methodological support is relatively widespread, as 67.22%[15] of public funds users use the Risk Management Guidelines when establishing and developing internal control systems[16].

Therefore, Serbia provides a useful example of a system in which formal indicators of risk management maturity can be clearly identified and measured. The available data show a relatively advanced level of formal establishment, particularly in terms of adopted strategies and risk registers, but also point to the need for further development of process maturity. The main challenge is not only to increase the number of institutions with formal risk management documents, but to ensure that these documents are actively used for risk assessment, mitigation planning, monitoring, updating and managerial decision-making.

### 4.2. Croatia: Process Indicators and Integrated Risk Management Development

In the case of Croatia, the available public documents provide a different type of evidence compared with Serbia. While the Serbian report contains direct quantitative indicators on the adoption of risk management strategies, the preparation of risk registers and the use of risk management guidelines, the Croatian documentation is more strongly oriented towards the assessment of internal control weaknesses, fiscal responsibility, internal audit opinions and the gradual development of integrated risk management. Therefore, Croatia is particularly relevant for analysing process indicators of risk management maturity.

The draft Consolidated Annual Report on the System of Internal Controls in the Public Sector of the Republic of Croatia for 2024 [13] was prepared on the basis of all 610 submitted Statements of Fiscal Responsibility, together with the accompanying documentation. This documentation included the Fiscal Responsibility Questionnaire, Plans for Eliminating Weaknesses and Irregularities, Reports on Eliminated Weaknesses and Irregularities from the previous year, and Internal Audit Opinions on the system of internal controls in areas audited during the previous year[13]. In addition, reports of the State Audit Office were analysed, as they contain information on weaknesses in internal controls related to budgetary processes and provide orders and recommendations for improvement.

The data show that, out of 610 submitted Statements of Fiscal Responsibility for 2024, 72 statements, or 12%, were submitted as Statement 1a, while 538 statements, or 88%, were submitted as Statement 1b [13]. Compared with 2023, when 55 users submitted Statement 1a, the number increased to 72 in 2024[13]. This indicates a certain improvement in the self-assessed state of internal controls, although the predominance of Statement 1b shows that weaknesses remain present in a large part of the system[13].

A more detailed insight into process maturity is provided by the reasons for submitting Statement 1b. In 2024, 531 users based Statement 1b on weaknesses in the internal control system identified through self-assessment in the Fiscal Responsibility Questionnaire[13]. In addition, 142 users referred to unimplemented orders and recommendations of the State Audit Office, while six users referred to other available information on institutional operations, including investigations related to suspected irregularities of a corruptive nature[13]. The document also emphasises [13] that Internal Audit Opinions must be taken into account when answering the Questionnaire, and that if internal audit findings or recommendations affecting a particular answer have not been implemented, the user cannot provide a positive answer without prior agreement with internal audit.

The Fiscal Responsibility Questionnaire functions as an important process indicator because it tests the functioning of internal controls in key budgetary processes, including budget and financial planning, budget execution, public procurement, accounting, reporting, transparency and asset management. The analysis [13] for 2024 shows a positive trend, as weaknesses and irregularities decreased in all questionnaire areas compared with 2023. Nevertheless, the largest number of weaknesses was still recorded in asset management, where 433 users identified weaknesses in 2024[13], compared with 463 in 2023[13]. Weaknesses in budget or financial plan execution were identified by 408 users, compared with 430 in 2023, while accounting weaknesses were identified by 295 users, compared with 337 in the previous year[13].

Other areas also show improvement, although weaknesses remain visible. In 2024, 144 users identified weaknesses in reporting and other areas, compared with 165 in 2023[13]; 92 users identified weaknesses in public procurement, compared with 106 in 2023[13]; 87 users identified weaknesses in budget or financial planning, compared with 109 in 2023[13]; and 40 users identified weaknesses in transparency, compared with 50 in 2023[13]. These indicators are not direct measurements of risk registers or risk strategies, but they provide a useful picture of risk areas within the internal control system.

The Croatian data also point to recurring structural weaknesses. The most significant weaknesses identified through self-assessment at the level of counties, cities and municipalities relate to asset management, budget execution and accountin. The document [13] notes that weaknesses in asset management have been eliminated slowly over a six-year period, partly because of the complexity of the area, the involvement of many stakeholders and external institutions, and the financial resources required for resolving property-related issues. This indicates that process maturity depends not only on the identification of weaknesses, but also on the capacity to implement corrective measures over time.

A particularly important feature of the Croatian case is the transition towards integrated risk management. A horizontal audit of the risk management process was conducted in four ministries[13]: the Ministry of Finance, the Ministry of Regional Development and EU Funds, the Ministry of Justice, Public Administration and Digital Transformation, and the Ministry of Health. The purpose of this audit was, among other things, to determine the extent to which risk management is an integral part of management and decision-making processes[13]. This is highly relevant for assessing process maturity, because it shifts the focus from the mere existence of formal instruments towards their actual use in governance and decision-making.

The same document states that the purpose of the horizontal audit was to collect information that would be used to amend the relevant legal framework governing the form and procedures of risk management in strategic planning and managerial decision-making[14]. Furthermore, amendments to the Act on the System of Internal Controls in the Public Sector introduced the obligation to establish integrated risk management for all entities

covered by the Act[14], while the Ministry of Finance became responsible for preparing guidelines for integrated risk management.

Therefore, Croatia may be understood as a case in which risk management maturity is primarily visible through process-oriented mechanisms: self-assessment, identification of weaknesses, monitoring of corrective measures, internal audit opinions, quality assurance activities and the development of integrated risk management. Unlike Serbia, where formal indicators such as risk strategies and risk registers are directly measurable, Croatia provides stronger evidence of how internal control weaknesses are identified, reported and linked to further institutional development. This makes the Croatian case particularly important for analysing the transition from formal compliance towards process integration of risk management into planning, control and managerial decision-making.

### 4.3. Comparative Relevance of the Two Cases

The comparative relevance of Serbia and Croatia lies in the fact that both countries have developed public internal financial control systems within a broadly similar regional and administrative context, while their publicly available documents present different types of evidence on risk management maturity. This makes the two cases suitable for analysing the relationship between formal and process maturity in public sector risk management.

Serbia is particularly relevant as a case of formal maturity because its Consolidated Annual Report[15] provides direct quantitative indicators on the establishment of risk management instruments. The available data show the percentage of public funds users that have adopted risk management strategies, prepared risk registers and used risk management guidelines. These indicators make it possible to assess the extent to which risk management has been formally institutionalised within the public sector.

Croatia, on the other hand, is relevant as a case of process maturity because its available documentation[13] places stronger emphasis on fiscal responsibility, self-assessment, internal control weaknesses, internal audit opinions and corrective measures. Although the Croatian documents do not provide the same direct indicators on risk strategies and risk registers, they offer insight into how weaknesses are identified, monitored and linked to institutional improvement[13][14]. In addition, the ongoing transition towards integrated risk management shows that the Croatian system is moving from a compliance-based model towards a more process-oriented approach.

The comparison is therefore not based on identical indicators, but on complementary dimensions of maturity. Serbia provides clearer evidence of formal establishment, while Croatia provides stronger evidence of process-oriented monitoring and development. This distinction is important because a mature risk management system requires both dimensions. Formal instruments, such as strategies, guidelines[14][16] and registers, are necessary for standardisation and accountability, but they are not sufficient if they are not used in planning, decision-making, monitoring and corrective action.

From a methodological perspective, the comparison also highlights the limitations of relying only on quantitative indicators. A high percentage of adopted strategies or prepared registers may indicate progress, but it does not necessarily prove that risks are actively managed. Conversely, the absence of direct quantitative indicators on registers does not mean that risk management is underdeveloped, if the system contains strong mechanisms for self-assessment, audit follow-up, identification of weaknesses and continuous improvement.

For this reason, the Serbian and Croatian cases together provide a useful basis for examining risk management maturity as a multidimensional concept. The Serbian case shows the importance of formal institutionalisation, while the Croatian case illustrates the importance of embedding risk management into

broader governance, fiscal responsibility and internal control processes. Their comparison supports the central argument of this paper: effective risk management in the public sector depends not only on the existence of formal documents, but also on their actual use as tools for managerial accountability, prioritisation of controls, monitoring of measures and improvement of public governance.

## 5. CONCLUSION

This paper analysed risk management in the public sectors of Serbia and Croatia through the distinction between formal and process maturity. The starting assumption was that the existence of formal instruments, such as strategies, guidelines, risk registers and reporting templates, is necessary but not sufficient for effective risk management. A mature system also requires that these instruments are actively used in planning, decision-making, monitoring of weaknesses, implementation of corrective measures and assessment of residual risk.

The Serbian case shows a relatively developed level of formal maturity. The available data [15] provide direct quantitative indicators on the adoption of risk management strategies, the preparation of risk registers and the use of risk management guidelines. These indicators make it possible to assess the extent to which risk management has been formally institutionalised in the public sector. However, the same findings also suggest that formal establishment does not automatically ensure process maturity. The difference between the percentage of institutions that adopted risk management strategies and those that prepared risk registers indicates that the strategic framework is more developed than operational documentation and systematic monitoring[15].

The Croatian case provides a different type of evidence. Instead of direct indicators on strategies and registers, the available documents [13] emphasise fiscal responsibility, self-assessment, internal control weaknesses, internal audit opinions, corrective measures and the transition towards integrated risk management. This makes Croatia particularly relevant for analysing process maturity. The Croatian system shows how weaknesses in internal controls are identified, documented and linked to further institutional improvement. At the same time, the introduction of integrated risk management indicates a shift from a compliance-based approach towards a broader model in which risks should be connected with strategic planning, managerial decision-making and continuous improvement[13].

The comparison of the two cases shows that risk management maturity cannot be measured through one type of indicator only. Serbia provides stronger evidence of formal institutionalisation, while Croatia provides stronger insight into process-oriented mechanisms. These two dimensions are complementary. Formal maturity ensures standardisation, comparability and accountability, while process maturity shows whether risk management is actually embedded in governance practices and used as a tool for improving institutional performance.

The analysis also confirms the importance of the risk register as a central instrument of risk management. However, the value of a risk register depends on its practical use. If it is prepared only to satisfy formal reporting requirements, its contribution to management remains limited. If, however, it links objectives, risks, controls, mitigation measures, responsible persons, deadlines, implementation status and residual risk, it becomes an active tool of managerial accountability. In this sense, the assessment of residual risk is particularly important, because it shows whether existing controls and planned measures have actually reduced the level of exposure to an acceptable level.

The main conclusion of the paper is that effective risk management in the public sector requires the integration of formal and process maturity. Public institutions need formal frameworks, but they also need mechanisms that ensure regular updating, monitoring, responsibility, audit follow-up and the use of risk information in decision-making. Without this connection, risk management may remain an administrative exercise[17]. With it, risk management can become a practical instrument

for strengthening internal controls, improving the use of public resources, supporting accountability and enhancing the quality of public governance.

Future development of risk management in both systems should therefore focus not only on increasing the number of institutions with formal risk management documents, but also on improving the quality of their use. Particular attention should be given to the standardisation of risk registers, clearer assessment of inherent and residual risk, stronger monitoring of mitigation measures, better integration with internal audit findings and the use of risk information in strategic and operational decision-making. This would contribute to transforming risk management from a formal obligation into an effective mechanism of public sector governance.

## REFERENCES


[1] Australian National Audit Office. (2012). *ANAO report no. 16 2011–12: The management of compliance in the small to medium enterprises market*. Australian National Audit Office.

[2] Bernstein, P. L. (1996). *Against the gods: The remarkable story of risk*. John Wiley & Sons.

[3] Buganová, K., & Šimíčková, J. (2019). Risk management in traditional and agile project management. Transportation Research Procedia, 40, 986-993.

[4] Committee of Sponsoring Organizations of the Treadway Commission. (2013). *Internal control Integrated framework*. COSO.

[5] Committee of Sponsoring Organizations of the Treadway Commission. (2017). *Enterprise risk management Integrating with strategy and performance*. COSO.

[6] European Commission. (2015). *Public internal financial control: A reference model*. Publications Office of the European Union.

[7] INTOSAI. (2004). *Guidelines for internal control standards for the public sector*. International Organization of Supreme Audit Institutions.

[8] International Organization for Standardization. (2018). *ISO 31000:2018 Risk management—Guidelines*. ISO.

[9] Kissabekov, A. (2025). Analysis of best project management practices in construction to improve efficiency and reduce risks. *Economy & Business, 3*, 149–159. https://doi.org/10.24412/2411-0450-2025-3-148-152

[10] Kostirko, D., Zhao, J., Lavigne, M., Hermant, B., & Totten, L. (2023). A rapid review of best practices in the development of risk registers for public health emergency management. *Frontiers in Public Health, 11*, Article 1200438. https://doi.org/10.3389/fpubh.2023.1200438

[11] Maksimović, S., Jerotijević, D. (2023). Financial management and control: Trends and practices in Serbia. *Journal of Law and Administrative Sciences, 19*. http://jolas.ro/wp-content/uploads/2023/06/jolas19a4.pdf

[12] Maksimović, S., & Lazić, D. (2025). The risk of corruptive abuse of information technologies in public administration: Identification, control mechanisms and preventive measures. In Z. Miladinović Bogavac, N. Danilović, M. Stanković, & S. R. Alves (Eds.), *Economic and social development in bipolar and multipolar environment: Book of proceedings (127th ESD Belgrade 2025)* (pp. 322–332). Varazdin Development and Entrepreneurship Agency; MB University.

[13] Ministry of Finance of the Republic of Croatia, Central Harmonisation Unit. (2025). *Bulletin of the Central Harmonisation Unit, No. 38*. Zagreb.

[14] Ministry of Finance of the Republic of Croatia. (2017). *Guidelines for risk management in the operations of public sector institutions*. Ministry of Finance of the Republic of Croatia.

[15] Ministry of Finance of the Republic of Serbia, Central Harmonisation Unit. (2025). *Consolidated annual report for 2024 on the state of public internal financial control in the public sector in the Republic of Serbia*. Belgrade.

[16] Ministry of Finance of the Republic of Serbia. (2021). *Risk management guidelines*. Ministry of Finance of the Republic of Serbia.

[17] OECD. (2020). *Public integrity handbook*. OECD Publishing.

[18] OECD. (2023). *Public financial management and internal control: Good practices for strengthening accountability and risk management in the public sector*. OECD Publishing.

[19] Pickett, K. H. S. (2005). *The essential handbook of internal auditing*. John Wiley & Sons.

[20] Pickett, K. H. S. (2010). *The essential guide to internal auditing* (2nd ed.). John Wiley & Sons.

[21] Stamatović, M., Maksimović, S., & Sućeska, A. (2020). Risk management as a part of the internal system of financial controls: Practice in the public sector of Serbia. *Economy and Market Communication Review, 10*(2). https://www.emc-review.com/sites/default/files/EMC-godina-X_broj-2.pdf

[22] The Institute of Internal Auditors. (2024). *Global internal audit standards*. The Institute of Internal Auditors.

## УПРАВЉАЊЕ РИЗИЦИМА У ЈАВНОМ СЕКТОРУ СРБИЈЕ И ХРВАТСКЕ: КОМПАРАТИВНА АНАЛИЗА ФОРМАЛНЕ И ПРОЦЕСНЕ ЗРЕЛОСТИ

***Резиме:*** *Управљање ризицима у јавном сектору Србије и Хрватске испитује се кроз разликовање формалног успостављања инструмената управљања ризицима и њихове процесне зрелости у практичној примени. Полази се од становишта да постојање стратегија, смерница, регистара ризика и извештајних образаца представља значајан, али не и довољан предуслов за делотворно управљање ризицима. Стварна зрелост система огледа се у мери у којој се наведени инструменти користе у процесима планирања, доношења одлука, праћења уочених слабости, спровођења корективних мера и процене преосталог, односно резидуалног ризика. Циљ истраживања је да се упореде доступни показатељи развијености управљања ризицима у јавном сектору Србије и Хрватске, са посебним нагласком на разлику између формално успостављених инструмената и њихове стварне процесне употребљивости. Методолошки приступ заснива се на компаративној анализи званичних извештаја, смерница и јавно доступних докумената релевантних за област финансијског управљања, унутрашњих контрола и управљања ризицима. У случају Србије анализирају се непосредни квантитативни показатељи, као што су усвајање стратегија управљања ризицима, израда регистара ризика и примена смерница. У случају Хрватске, предмет анализе чине процесни показатељи, укључујући Изјаву о фискалној одговорности, Упитник о фискалној одговорности, идентификоване слабости система унутрашњих контрола, мишљења унутрашње ревизије и активности усмерене ка интегрисаном управљању ризицима. Очекивани допринос рада огледа се у продубљивању разумевања односа између формалне институционализације и практичне примене управљања ризицима као инструмента управљачке одговорности, рационалнијег коришћења јавних ресурса и унапређења квалитета јавног управљања.*

***Кључне речи:*** *управљање ризицима; јавни сектор; регистар ризика; резидуални ризик; унутрашње контроле; формална зрелост; процесна зрелос*