

The supreme audit institution in the Republic of North Macedonia – two decades of building public trust

The supreme
audit
institution

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Abstract

Purpose – The state audit is crucial for society in ensuring the transparent and legal spending of public funds. In the Republic of North Macedonia, although state audit-related activities have existed since the state's independence, the State Audit Office started operating as a Supreme Audit Institution in 1999. The purpose of this research was to explore the development of the State Audit Office in the Republic of North Macedonia over the past two decades regarding the organisational aspect and the state audit-related activities.

Design/methodology/approach – The research is based on a detailed analysis performed using statistical tests of data collected from the State Audit Office's annual reports on operation and performed audits in the period 2001–2020, concerning the budget, organisational size, audit engagements, audited public revenues and expenditures, audit reports, and given recommendations and their implementation. The survey method was used to determine other factors that could have a correlation with the development of the State Audit Office.

Findings – In general, it can be concluded that the State Audit Office has grown in terms of financial resources at its disposal and the organisational size (number of employees). Although there is no correlation between the regularity audit engagements and the audited public revenues and expenditures, there is still a positive correlation between the audited public revenues and expenditures. The implementation of the given recommendations by the auditors is not related to the number of recommendations in the final audit reports. There are several internal, external and international factors that have a positive correlation with the development of the State Audit Office.

Research limitations/implications – The first limitation of this paper pertains to the period of existence of the Supreme Audit Institution in the Republic of North Macedonia not being very long in order to be able to draw more significant conclusions. The second limitation concerns the measurement of the variables from the survey being based only on the perception of the state auditors. Such a measurement method might be considered less accurate in describing the actual situation.

Originality/value – To the best of our knowledge, this paper is the only one that explores the development of the Supreme Audit Institution in the Republic of North Macedonia. Furthermore, it provides a good basis for further detailed research on areas relevant to the issue. We believe that this research will enrich the existing body of literature on state audit by offering a concrete example of the development of a Supreme Audit Institution in a less-researched geographical area.

Keywords State audit, Supreme audit institution, State audit office, Development, North Macedonia

Paper type Research paper

Introduction

The purpose of state audit is to objectively obtain and evaluate evidence for determining whether the information presented by entities in the public sector accurately corresponds to the established criteria. The Republic of North Macedonia makes an interesting example of research in the field of state audit given that it is a relatively new country that gained independence in 1991. Therefore, the state audit began to be regulated by law in 1997, and the first audits by the Supreme Audit Institution (hereinafter referred to as SAI) were carried out in 1999. One of the key preconditions for the Republic of North Macedonia's accession to the European Union is the establishment of a SAI. The need to set up an audit institution is also confirmed by the findings that have been compounded by the European Commission reports on the Republic of North Macedonia as a candidate country according to which, as mentioned



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in *Chapter 32 Financial Control* – a SAI should have a solid basis in the Constitution and must be regulated by a separate law (European Commission, 2020).

The State Audit Office of the Republic of North Macedonia (hereinafter referred to as SAO) is a member of the International Organisation of Supreme Audit Institutions (INTOSAI) since 2001 and the European Organisation of Supreme Audit Institutions (EUROSAI) since 2002. Since 2005, the SAO is an active member of the SAI network of candidate countries and potential candidates for accession to the European Union and of the European Court of Auditors in Luxembourg.

Two decades since its establishment, significant progress can be reported, both, in the field of state audit and the work of the public administration and the management of public funds (European Commission, 2020). This progress can be seen in the increased number of employees in the SAO, the number of audits performed, the increased number of irregularities identified in the performance of public sector institutions, and most notably, the increased awareness of the citizens about the need and importance of audits in ensuring the proper spending of the public funds.

The topic covered in this paper is current, relevant and insufficiently researched in the Republic of North Macedonia, and the paper offers a glimpse into a less-researched geographical area – the Balkans. Hay and Cordery (2021) conclude that there is a potential for useful and publishable research, as well as a potential to contribute to practical improvements in the public sector auditing. In 2018, in a detailed literature review of the history and significance of public sector auditing, the many great benefits of public sector auditing were presented, and there is room for further research (Hay and Cordery, 2018). By referring to existing literature, the paper points to the progress made in the area of state audit by analysing the historical development, the current situation and the future directions and tendencies for promoting the activities of the SAO as a SAI in the Republic of North Macedonia. Making particular reference to all annual reports issued by the SAO, from its establishment until today, it confirms the adequacy of the financial and human resources capacity of the SAO to exercise its authority, the tendency to perform certain types of audits and the number and types of audit engagements.

This research focuses on the *development* of the SAO of the Republic of North Macedonia since its founding in 1999 to the present.

Reliability analysis, descriptive statistics, and Spearman rank-order correlation coefficient were used to analyse the collected data. The analysis was done using the SPSS software.

The paper is conceived in the following sections: introduction, the importance of the state audit, review of the development of the state audit in the Republic of North Macedonia, analysis, research methodology, results and discussion. All the obtained results of the research are summarised in the conclusion, which indicates whether the state audit in the Republic of North Macedonia is making progress in terms of organisational/institutional growth following the audit trends in the public sector.

The importance of the state audit

The state audit has existed in some shape or form in most of the countries in Europe for several hundred years, but, inevitably, most SAIs have undergone major changes in terms of their structure, the extent of their remit and the scope of their powers at some point of time in their history (NAO, 2003).

Many authors have researched the history and development of SAIs and have attempted to gauge their benefits through detailed literature reviews. Thus, several areas related to audits in the public sector have been covered by recent research, namely performance audit for improving public sector performance management (Marchi and Bertei, 2016); conflict of

interest and nepotism monitoring (Cesário *et al.*, 2020); supra-institutional organisations' role in developing state/public audit capacity (Gørrissen, 2020); strategies for transparency and accountability through traditional and social media (González-Díaz *et al.*, 2013); strategies for institutional communications through social media adoption (Torres *et al.*, 2020) and social media engagement (Hancu-Budui *et al.*, 2020); internal auditing in the public sector (Nerantzidis *et al.*, 2020); and many others.

In her paper, Bonollo (2019) reviewed the existing literature on the outcome of SAIs' audit activities and examined the measures recommended by researchers in their theoretical or empirical studies, and she came to the conclusion that almost all of the studies focused on performance audits. "Probably in the wave of New Public Management reforms, there has been a catalyst for more academic interest in performance audit with a little coverage of traditional financial audit. These results emphasize the need for further research on traditional financial auditing. The analysis highlights the predominance of Scandinavian and northern European cases, with a solid presence of Anglo-Saxon papers" (Bonollo, 2019). After performing a detailed review of the literature, Bonollo (2019) pointed out that "besides improvements for auditees, according to which many authors see it in the implementation of the given recommendations, other authors highlighted benefits for politicians and citizens, and some researchers suggested that an SAI's audit activity does not always generate positive results but can sometimes have unfavourable unexpected outcomes. Examples included fear of innovation, overproduction of reports, and excessive bureaucratic procedures."

The state audit is a mandatory condition for assessing the effectiveness of the budget policy as it allows forming and supporting the stimulus for guaranteeing its effectiveness. A lack of state audit leads to a lack of control over developers of the budget policy, which contradicts the idea of high effectiveness in their work. That is why the introduction of a state audit of the budget policy is a necessary measure for ensuring its high effectiveness (Bogoviz *et al.*, 2018).

According to Bobes (2012), the effective use of public funds is necessary for public finance management and the efficiency of decisions made by competent persons in the public sector. In addition, she stressed that the state audit can prevent and/or remove deficiencies within optimum time. Bobes (2012) argued that with the development of universal values of democracy, freedom and the state of law emerges a stronger need to establish and strengthen independent, professional and modern structures – structures that would monitor an important factor of progress and prosperity, which is public money, and make an essential contribution in ensuring that the legality and efficiency of the public funds' usage lie under the purview of the state audit activity.

Ramkumar and Krafchik (2005) considered the state auditors watchdogs of public finances who act as critical links in enforcing the accountability of executive agencies to national and state legislatures, and through them, to the general public.

Nguyen (2012) concluded that the SAO has an important position in the system of financial inspection. It helps control public spending and strengthen financial discipline, thus contributing to the financial transparency of public expenditure. Instituting state audit is necessary as it better assists in the management and realisation of the state budget, money and state assets, contributing to thrift practice, the fight against corruption, the prevention of loss and waste, the detection and prevention of illegal acts, and raising the efficiency of use of the state budget, money and assets (Nguyen, 2012).

The European Court of Auditors stated in their "Handbook on SAIs in the EU and its Member States" (2019) that SAIs independently investigate the efficient, effective and economic use of public resources as well as the compliance of public spending and revenue collection with the applicable rules. They support parliamentary control of governments with their fact-based, objective and impartial audit reports, thereby helping to improve policies,

programmes, public administration and the management of their state's finances. This helps build citizens' trust in our societies' checks and balances and further develop democracies that function properly ([European Court of Auditors, 2019](#)).

[Titsworth and Stapenhurst \(2002\)](#) argued that SAIs' role in curbing corruption is increasingly relevant and that the audits are potent deterrents to the wasting and abuse of public funds. According to them, SAIs help reinforce the legal, financial and institutional framework which, when weak, allows corruption to flourish, and they establish a predictable framework of government behaviour by reducing arbitrariness in the application of rules and laws. Furthermore, each SAI develops its own policies and procedures for performing audit engagements ([Mamic *et al.*, 2017](#)).

Further, [Johnsen *et al.* \(2019\)](#) placed focus more on performance auditing and its importance. Thus, in their paper on comparative analysis of four Nordic countries, they identify the factors that positively influence the conducting of performance audits, namely "SAIs with much legitimacy, high quality in the audit report, avoiding rigidity and communicating the performance audits to the wider society through media attention. Other factors that may determine impacts are the organisational design of central government institutions, such as decentralisation, and the main objectives of the performance audit, as well as financial factors such as cutback management in public policy" ([Johnsen *et al.*, 2019](#)).

In the literature related to state auditing, besides efficiency, economy and effectiveness, some authors comment on ethics as part of state auditing. [Bringselius \(2018\)](#), in her paper, mentions the addition of ethical audit to the SAI portfolio but concludes that adding this type of audit may lead to some risks and would have major implications for the role and position of the SAI. On the other side, the SAIs are expected to serve as role models for other audit institutions, so ethical aspects must be included in audit practice if they want to maintain legitimacy ([Bringselius, 2018](#)).

Significant research is done by the Organisation for Economic Co-operation and Development -[OECD \(2016\)](#) wherein it is stated that "although tensions exist relating to SAIs moving more into the realm of performance auditing and evaluation, a lack of skills within SAIs were identified as the greatest limitation to SAIs' involvement in activities." Likewise, a fascinating inquiry that drives this research concern who controls the regulators, and it is guiding peer reviews and performance management framework for self-assessment. Thus, most SAIs are subject to scrutiny by international organisations such as the OECD itself. Overall, the conclusion is that "SAIs' quality, objectivity, and relevance of work is critical to them having an impact and providing a complementary, rather than duplicative and inefficient, role in evaluating for accountability and results" ([OECD, 2016](#)).

[Slobodyanik *et al.* \(2019\)](#) pointed out that the audit in the public sector can support national confidence toward authorities by means of deciding economic feasibility, efficiency and effectiveness in the country's resource management and the effectiveness of the fight against corruption.

The main purpose of the state audit is to offer recommendation in the final audit reports by the state auditors for overcoming the established conditions. According to [Institute of Internal Auditors \(2012\)](#), auditors' findings and recommendations represent critical inputs for good governance that can lead organisations to remedy identified weaknesses and deficiencies promptly and appropriately. Many scientific researchers have investigated the factors that influence the impact of audit reports, or rather, the effect of the implementation of audit recommendations. "Factors that are relevant are the constructive relationship between auditor and auditee; audit report quality; the existence of a follow-up mechanism; parliamentary involvement; dissemination of the follow-up report" ([EUROSAT, 2021](#)). Furthermore, [Dain and Rahmat \(2017\)](#) conducted research in which they determined the factors influencing public sector auditees in implementing audit recommendations, and they concluded that the attitude on audit recommendations, the auditor's credibility and quality,

the effectiveness of the follow-up audit, the accountability index score (audit rating system), the Auditor General's dashboard coverage and the Audit Committee effectiveness influence the actual implementation of audit recommendations.

Hancu-Budui and Zorio-Grima (2021) did a comprehensive research for the synergies, institutional transparency, gender equality, and sustainability engagement of the SAIs in Europe, and according to their results, "regarding transparency, environmental engagement and SDGs coverage, the average age of SAIs staff influences the institutions' transparency, meaning that the SAIs with younger staff are more transparent. SAIs transparency is influencing the reporting on environmental audits and also the SDGs coverage in audits."

Finally, Khalili *et al.* (2012) prioritised the factors that influenced the development of operational audit, and they identified 127 variables under three principal factors impacting the development of the operational audit. They recommend carrying out further research as there are factors that have not been identified yet.

Review of the development of the state audit in the Republic of North Macedonia

In the Republic of North Macedonia, the [Law on State Audit \(1997\)](#) has established the framework for the state audit, and it is performed by the SAO, as an independent public institution managed by the Auditor General ([State Audit Office, 2021](#)). To increase the compliance of the state audit legislation with the requirements of the Lima and Mexico Declarations of Independence and to bring it closer to the standards and practice of the European Union, this law underwent several changes, and finally, in 2010, a new Law on State Audit was adopted, which is largely in line with the requirements of the stated declarations.

The state audit in the Republic of North Macedonia began with the independence of the republic in 1991 and went on until 1998, during which the Directorate for Economic-Financial Audit was given the duty of performing the state audit activities in the country. In this seven-year period, the employees of the Directorate, in addition to auditing, worked in the field of appraising socially owned enterprises for the purposes of privatisation of social capital. On 31 January 1999, some of the Directorate employees at the Payment Operations Office transferred to the newly established SAO regulated by the Law on State Audit ([State Audit Office, 2021](#)), which is formulated based on the Parliamentary/Westminster model.

The SAO started operating in early 1999 with nine employees transferred from the Directorate. The first audits were conducted during 1998–1999. The first annual report on the SAO's operation and the audits performed following the law was submitted to the Parliament of the Republic of North Macedonia in 2000. Since 2005, the SAO has been carrying out a performance audit in addition to the standard regularity audit, which includes financial audit as well as compliance audit. The SAO was established to protect the interests of the state, i.e. the citizens as taxpayers for purposeful and efficient spending of public funds in fulfilling the functions of the state.

The legal task of the SAO is to audit the use of public funds and to provide information to state institutions and the public on the proper use of funds ([Akademik, 2016](#)). Today, the SAO is an independent institution for auditing the use of the budget and other public funds in the Republic of North Macedonia.

According to the latest progress report on the Republic of North Macedonia issued by the European Commission ([European Commission, 2020](#)), the Law on State Audit is largely in line with the standards of the INTOSAI. However, the independence of the SAO is not yet dictated in the Constitution. The quality of the audit work has been improved by following the INTOSAI standards. However, performance auditing needs further improvement. The SAO has sufficient institutional capacity to perform its tasks, with 68 certified state auditors out of a total of 90 state auditors. Regarding the impact of the audit work, the SAO recommendations were not systematically implemented by the audited institutions.

Parliamentary oversight of audit report findings still needs improvement. Additional efforts are required for an enhanced cooperation with the Parliament, and in particular, for the follow-up of the SAO reports for improving the implementation rates of recommendations.

In the book *Public Sector Accounting, Auditing and Control in South-Eastern Europe* (2019), the challenges to further developing the SAO of the Republic of North Macedonia are stated: “(1) the capacity of the State Audit Office needs to be further enhanced through the training of the staff and the sharing of international experience and expertise in order to perform performance audit engagements within the public sector entities; (2) the general public should become more familiarised with the role of the state audit office and how audit reports should be used for the better monitoring and control of operations of the public sector institutions; (3) although other institutions of the judicial system follow up on audit reports and undertake legal measures in response to significant findings of non-compliance with laws and regulations, further recognition of the state audit findings, support and follow-up actions by the parliament are needed” (Atanasovski and Minovski, 2019).

Analysis of the work of the state audit office in the past two decades

For the purposes of the research, several variables have been considered, such as the SAO’s approved budget from 2001 to 2020, as well as the number of employees and audit engagements per year. The analysis identifies the development of the SAO for 20 years concerning the resources available and the trend in the number of audit engagements.

In addition, Figure 1 shows the movement of the SAO’s budget for the period from 2001 to 2020.

Figure 1 shows the SAO’s budget over the years. It is quite logical that, as a young institution, the budget in the first few years after the institution’s establishment is the smallest, which gradually increased; in 2009, it amounted to approximately 2 million euros. Following the Law on State Audit (2010), the financial resources for the operation of the SAO are covered in the Budget of the Republic of North Macedonia, but the funds are provided from the basic state budget, and a small percentage of the amount comes from the collected revenues from the performed audits before the new Law on State Audit came into effect in 2010. The percentage of realisation of the SAO’s budget over the years reaches an average 99%, and in terms of the structure of expenditures, most of them are expenditures for salaries and allowances (over 80%), followed by goods and services and a small part to capital expenditures (State Audit Office, 2001-2020).

Furthermore, Figure 2 shows the trend in the number of the SAO’s employees (organisational size) and the audit engagements performed for the same period (2001–2020).

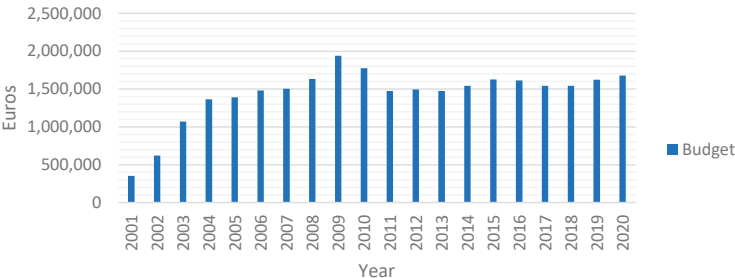


Figure 1.
SAO’s budget
(2001–2020)

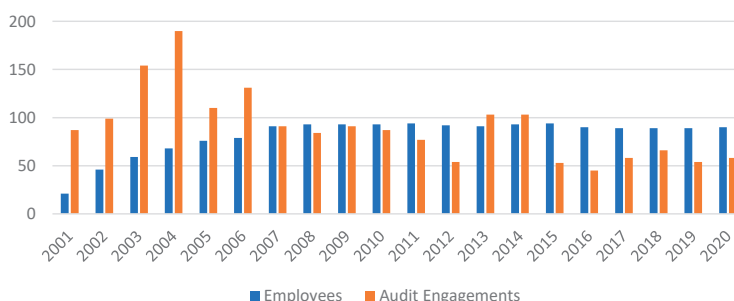
Source(s): Authors’ calculation

According to the latest available information published by the SAO, 155 work positions have been systematised, and 88 work positions have been filled out (State Audit Office, 2020). Among the SAO's employees, 99% have higher education, and the gender representation is 68% female and 32% male (State Audit Office, 2020). It is interesting to note that in 2003 and 2004, the number of conducted audit engagements was drastically higher than in the other years, and the number of employees gradually increased from 2001 to 2008, after which it remained constant until 2020. Hence, it can be inferred that in the beginning, the SAO had an ambitious audit programme, influenced by several important factors as follows:

- (1) Audits of institutions with smaller budgets
- (2) Certain institutions in those years had smaller competencies, such as the municipalities which, with the decentralisation process in the next period, gained greater competencies, and thus, the time for conducting audits in the municipalities increased.
- (3) Less time to plan audits
- (4) Lower volume of tests in the audited entities
- (5) Alignment of the SAO's work methodology with the auditing standards
- (6) Change of SAO's management from 2007 to 2019, and the consequent introduction of new strategic plans and more structured annual programmes.

Figure 3 shows the number of recommendations given by the SAO in the final audit reports, as well as the number of recommendations implemented by the audited entities.

The trend in these data is shown from 2008 to 2020, given that these data are available in the annual reports on the operation of the SAO starting from 2008 onwards. In addition to the basic mission of the SAO as a SAI to timely and objectively inform the public and the other stakeholders about the findings of the conducted audits, the purpose of the SAO's audits is to make clear and effective recommendations that assists in supporting public institutions and users of the public funds to improve their management. Pursuant to the Law on State Audit (2010), the legal representative of the entity is obliged to inform the SAO and the body responsible for supervision and control about the measures taken regarding the findings and recommendations in the audit reports within 90 days of receipt of the final report. From Figure 3, it can be noted that the number of implemented recommendations in some of the years is extremely small, indicating a considerable portion of the audited entities did not act on the recommendations given by the state auditors.



Source(s): Authors' calculation

Figure 2.
Number of the SAO's
employees
(organisational size)
and total audit
engagements

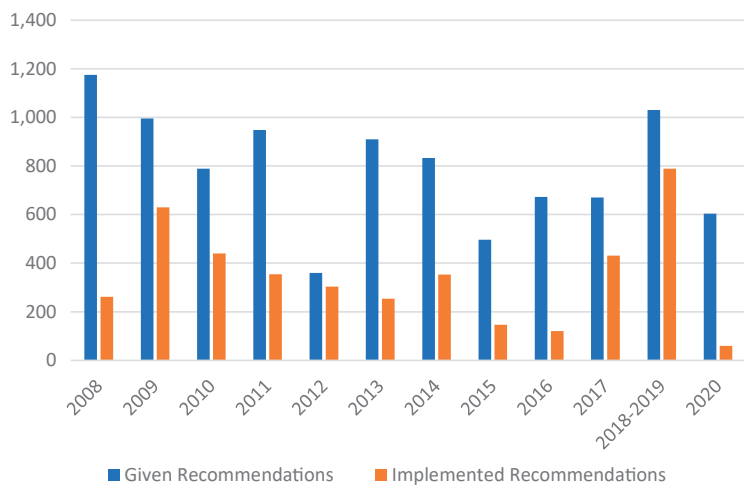


Figure 3.
Recommendations
given and implemented

Source(s): Authors’ calculation

Regarding the non-implementation of the recommendations, the Hofstede’s Uncertainty Index can be mentioned, based on which the Republic of North Macedonia has a very high score of 87 on Uncertainty Avoidance, demonstrating that the nation sees mechanisms to avoid ambiguity. Individuals don’t promptly accept change and are very risk-averse. To limit the degree of uncertainty, there is a psychological condition for exacting standards, laws, rules, policies and guidelines (Hofstede Insights, 2020). In this part, additional mechanisms should be established to ensure the implementation of the recommendations.

In its final reports, the SAO makes a clear classification of the types of beneficiaries that announces the total audited public revenues and expenditures, mentioned as follows: the central budget, the budget of local self-government units, the budget of funds, public health institutions and hospitals, political parties, public enterprises and other institutions. Figure 4 illustrates the volume of public revenues and expenditures audited by the SAO over the years (2007–2020). Each year, the SAO prepares an annual programme according to certain criteria in which entities that will be subject to audit in that year are stated. Therefore, the audited entities are different each year. According to this, a realistic picture of the scope of the state

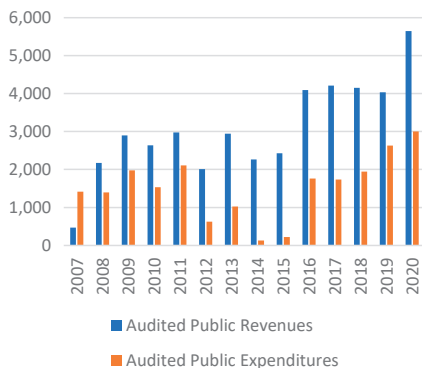


Figure 4.
Audited public
revenues and
expenditures

Source(s): Authors’ calculation

audit might be obtained by measuring the ratio between the total audited public expenditures and the total public expenditures incurred by the public sector entities that were audited in a specific year. Thus, Figure 5 gives the percentage of the scope of the state audit from 2007 to 2020.

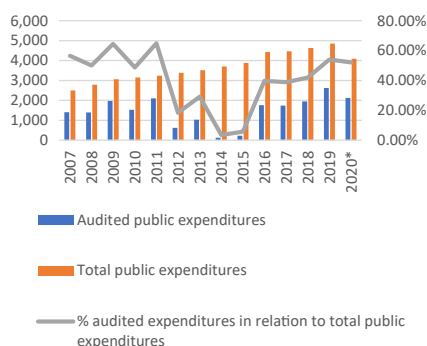
It can be noticed that the scope of the state audit, i.e. the relationship between the total audited public expenditures and the total public expenditures ranges from about 64% (highest in 2011) to 3% (lowest in 2014). From Figure 5, it could be observed that in 2014 and 2015, the amount of audited expenditures drastically decreased. From a qualitative analysis of the annual reports of the SAO for the years 2014 and 2015, it can be concluded that the expenditures from the budgets for the Funds/public funds in the Republic of North Macedonia were not audited at all, thus reducing the volume of audited public expenditures in the mentioned years. According to the annual programmes of the SAO for 2014, Funds were subject to performance audit in terms of financial management and control as well as internal audit, which does not cover the expenditures of these entities. In addition to the unaudited expenditures of these auditees in 2014 and 2015, with regard to the qualitative analysis of the annual reports issued by the SAO, in the same years (2014 and 2015), the audited amount of expenditures from the central budget of the state was drastically reduced, compared with other years (although the audited public revenues from the central budget for those two years remain quite high). Besides these factors, the reduced audit of public expenditures for these years should be subject to further in-depth research.

Furthermore, in 2014, the SAO conducted several performance audits related to public internal financial control in the Republic of North Macedonia focused on the effectiveness and efficiency of financial management and control and internal audit in the public sector in the country without covering the public expenditures.

Research methodology

To perform relevant analysis in this research the data were obtained in two ways:

- (1) *Secondary data* collected from the website of the SAO of the Republic of North Macedonia: www.dzr.gov.mk, including the final audit reports and the SAO's annual



Note(s): * In 2020, according to the available information from the SAO annual report, only the total expenditures of the state budget and the budgets of the local self-government units (as well as the audited public expenditures of those budgets) are represented in Figure 5

Source(s): Authors' calculation

Figure 5.
Scope of the state audit
(2007–2020)

reports on operation and performed audits in the period 2001–2020. Regarding the development of the state audit in the Republic of North Macedonia, discussed in the literature review, but also the given analysis of the operation of the SAO based on the secondary data, our research offers an overall view on the financial and organisational aspect, and the state audit-related activities, by identifying variables relating to: SAO's budget, organisational size, number of audit engagements, number of regularity audit engagements, volume of audited public revenues and expenditures, number of audit reports, number of given recommendations and number of implemented recommendations. Hence, our analysis aims to answer the research questions as follows:

- Are the organisational size and the number of audit engagements related to the SAO's budget?
 - Is the volume of audited public revenues and audited public expenditures related to the number of regularity audit engagements?
 - Is there a relationship between the number of audit reports and the number of given and number of implemented recommendations?
- (2) *Primary data* collected through a survey sent to all state auditors employed at the SAO regarding their perceptions about internal, external and international factors having an impact on the SAO's development. The survey consisted of the following four sections: the first part dealt with the general characteristics of the respondents and one question pertained to the SAO's development (5 questions), the second part concerned internal factors (13 questions), the third part was related to external (national) factors (5 questions) and the fourth part was regarding international factors (3 questions). The time required to complete the survey was no more than 5 min. Regarding the variable for the development of the SAO, the respondents were reminded that the “development of SAO” in our research meant an increase in the SAO's budget, the number of employees, the number of audits and final reports issued, the volume of audited public expenditures and revenues, the number of recommendations given and implemented, etc. The following factors were defined as internal factors: “Culture and Values”, “Human Capital” and “Institutional Arrangements”. Moreover, the external (national) factors were “Socio-Economic Conditions” and “Political will”, and the international factors were “International Impetus for Reforms”, “EUROSAI/INTOSAI membership” and “EU Accession”. Participants received an invitation email that provided a link to the survey. After a second reminding by email, 69 responses were received, representing a 76.67%. The survey supporting this research was issued on 13 October 2021, and it is given in [Appendix](#).

For this part of the research, our analysis aims to answer the question:

- Is there a relationship between the development of the SAO and the identified internal, external and/or international factors?

Before starting any research analysis of the results, a reliability analysis of the survey results was carried out. According to many authors, Cronbach's alpha is considered a measure of certainty, and the coefficient α must be greater than 0.7 ($\alpha \geq 0.7$) for the answers to be considered relevant and acceptable for further analysis. Cronbach's alpha was calculated for the survey questions divided into three groups: internal, external and international factors, and the first five questions that identify the characteristics of the respondents were

excluded. The results are shown in the Table 1 which means that the results can be considered relevant and appropriate conclusions can be drawn.

Table 2 provides an overview of the dependent and independent variables together with their abbreviations and the measurement type. To measure the variable “Budget”, the absolute amount of the SAO’s budget was taken in the given period of time, and for the “Organisational size” the number of employees was used. Furthermore, for the variable “Audit Engagements”, the number of total audit engagements conducted by the SAO was utilised, including all types of engagements (financial, compliance and performance audits), while for the variable “Regularity Audit Engagement”, only the number of engagements carried out by the state auditors related to regularity auditing (financial and compliance audits) was used. Similarly, with the variable for the audit reports, namely “Audit Reports”, the total number of all audit reports issued by the SAO was employed. The audited public revenues and expenditures cover the total amount of revenues and expenditures audited by the SAO in the given period of time. For the recommendations, the given recommendations as the total number of recommendations given by the SAO over the years were analysed, in addition to the number of recommendations implemented by the audited entities by years. Finally, for the internal, external and international factors that could influence the SAO’s development, we used the five-point Likert scale and the mean value of the received answers. This research followed a quantitative research method.

The processing of the collected data was done using SPSS software through descriptive statistics to describe the basic features of the data in the study, and Spearman rank-order correlation to indicate whether it exists positive or negative monotonic relationship between the variables.

Results and discussion

Although some of the data regarding variables are already presented earlier in this paper and a brief overview of them given, the following table presents the descriptive statistics for each variable used in the research (see Table 3).

From the descriptive statistics, it can be noted that the first three variables – the budget, organisational size and audit engagements – have been analysed for 20 years, while the next four variables have been analysed for 14 years and the last three variables for 13 years because the SAO annual reports contain information on these variables from 2007 to 2008 respectively.

The budget range for the entire period spanning the SAO’s existence is from 354 thousand euros to approximately 2 million euros, which indicates a six-fold increase. The number of employees ranges from 21 to 94 employees in the given period of time or with a mean of 81 employees in a period of 20 years. The mean of total audit engagements for 20 years is 90 engagements or an average of 1.1 audit engagements per employee, while the mean of audit engagements for regularity audits is 56, but it refers only to the past 14 years. Regarding the given recommendations, the mean in the past 13 years is 750 given recommendations per year, whereas that the average of implemented recommendations is 128, which indicates that the recommendations of the state auditors are not implemented systematically by the audited

Internal factors		External factors		International factors	
Cronbach’s alpha	N of items	Cronbach’s alpha	N of items	Cronbach’s alpha	N of items
0.966	13	0.791	5	0.756	3

Source(s): Authors’ text

Table 1.
Reliability analysis

Table 2.
Description of the
variables

Variables	Abbreviation	Measurement
SAO's budget	BUDGET	The absolute amount of the budget available to the SAO (2001–2020)
Organisational Size	ORGAN_SIZE	The number of employees in the SAO (2001–2020)
Audit engagements	AUD_ENG	The number of total audit engagements conducted by the SAO (2001–2020)
Regularity audit engagements	REG_AUD_ENG	The number of total regularity audit engagements conducted by the SAO (2007–2020)
Audited public revenues	PUB_REV	The total amount of audited public revenues by the SAO (2007–2020)
Audited public expenditures	PUB_EXP	The total amount of audited public expenditures by the SAO (2007–2020)
Audit reports	AUD_REP	The total number of the Audit Reports issued by the SAO (2008–2020)
Given recommendations	GIV_REC	The total number of recommendations given in the final reports (2008–2020)
Implemented recommendations	IMPL_REC	The total number of recommendations implemented by the auditees (2008–2020)
Culture and values	CUL_VAL	Five-point Likert Scale
Human capital	HUM_CAP	Five-point Likert Scale
Institutional arrangements	INST_ARR	Five-point Likert Scale
Socio-economic conditions	SOC_ECO	Five-point Likert Scale
Political will	POL_WILL	Five-point Likert Scale
International Impetus for Reforms	INTER_IMP	Five-point Likert Scale
EUROSAI/INTOSAI membership	EUROSAI_INTOSAI	Five-point Likert Scale
EU accession	EU	Five-point Likert Scale
SAO Development	DVLP	Five-point Likert Scale
Source(s): Authors' text		

Table 3.
Descriptive statistics of
the variables

	N	Minimum	Maximum	Mean	Std. Deviation
BUDGET	20	354,280	1,941,659	1437395.9	369447.18
ORGAN_SIZE	20	21	94	81.5	19.319
AUD_ENG	20	45	190	89.75	36.584
PUB_REV	14	469	5,647	3,066	1273.4777
PUB_EXP	14	128	2,999	1535.3571	829.2159
REG_AUD_ENG	14	17	93	56.3571	23.72148
GIV_REC	13	360	1,175	749.9231	229.18859
IMPL_REC	13	59	630	312.6923	178.98202
AUD_REP	14	79	202	128.1429	42.59443
DVLP	69	3	5	4.71	0.52
CULT_VAL	69	1	5	4.06	1.188
HUM_CAP	69	1	5	4.33	0.966
INST_ARR	69	1	5	4.39	0.875
SOCIO_ECON	69	2	5	4.30	0.784
POL_WILL	69	1	5	3.85	1.099
INTER_IMP	69	2	5	4.24	0.805
EUROSAI_INTOSAI	69	1	5	4.44	0.825
EU	69	1	5	4.64	0.715
Source(s): Authors' calculation					

entities. Finally, for the other factors that could affect the development of the SAO, we used the mean values of the responses received from the state auditors. The descriptive statistics of the survey show that the state auditors believe that the SAO in the past 20 years has undergone great development in terms of budget size, number of employees, number of conducted audits, and audited public revenues and expenditures, as well as issued final reports, and the number of recommendations and their implementation (mean value: 4.74). From the factors that influence the development of the SAO, all reported factors, except political will, have an average value above 4; with which the respondents strongly agree that the mentioned internal, external and international factors influence the development of the SAO, and according to them, the biggest influence was the possible EU membership (mean value: 4.64), the memberships in EUROSAT/INTOSAT (mean value: 4.44) and the institutional arrangements (mean value: 4.39).

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A simple Kolmogorov–Smirnov test was conducted for all variables with which the distribution of the data can be detected. This test was done to determine whether the sample is normally distributed or not, by testing the normality of the residual. In the preliminary results, for the ORGAN_SIZE variable, the value of the test was less than 0.05, and therefore, a natural logarithm was used to transform the data due to their normal distribution.

The significance value from the Kolmogorov–Smirnov test for the variables of the survey method was 0.000, which is less than 0.05; however, the central limit theorem assumes that the data are normally distributed if the sample exceeds 30 (Field, 2009), so these data were used in the further research process.

The relationship between the SAO's budget, the organisational size and the audit engagements

Starting with a basic analysis, with the previously analysed budget of the SAO in the past twenty years, as well as the organisational size through the number of employees and the number of audit engagements, in this section, the relationship between these two variables is statistically proved (see Table 4).

The Spearman's correlation result shows that there is a significant positive correlation between the SAO's budget and the organisational size, $r(20) = 0.670, p = 0.001$, but a negative correlation between the SAO's budget and the number of audit engagements, $r(20) = -0.539, p = 0.014$. As mentioned previously, for increasing or decreasing the number of audit engagements other factors deserve much attention and should be the subject of future research. These other factors that could influence the number of audit engagements include

Correlations			BUDGET	ORGAN_SIZE	AUD_ENG
Spearman's rho	BUDGET	Correlation Coefficient	1.000	0.670**	-0.539*
		Sig. (2-tailed)		0.001	0.014
		N	20	20	20
	ORGAN_SIZE	Correlation Coefficient	0.670**	1.000	-0.398
		Sig. (2-tailed)	0.001		0.082
		N	20	20	20
	AUD_ENG	Correlation Coefficient	-0.539*	-0.398	1.000
		Sig. (2-tailed)	0.014	0.082	
		N	20	20	20

Note(s): **. Correlation is significant at the 0.01 level (2-tailed)

*. Correlation is significant at the 0.05 level (2-tailed)

Source(s): Authors' calculation

Table 4.
Spearman's correlation
between the SAO's
budget, the
organisational size and
the audit engagements

the following: conducting a larger number of audit engagements in several public sector entities that were smaller in certain years when the number of SAO employees was lower, increased competence of certain entities (such as municipalities) over the years that takes more time for auditing, conducting a larger number of tests at the auditees, etc.

From the obtained result it is noticed that there is no connection between the organisational size and the number of audit engagements.

The relationship between the regularity audit engagements and the audited public revenues and audited public expenditures

From [Table 5](#), it could be observed that the conducting of regularity audit engagements is not being related with the audited public revenues and the audited public expenditures ($p > 0.05$), but there is a significant positive correlation between the audited public revenues and the audited public expenditures, $r(14) = 0.719$, $p = 0.004$.

This conclusion is supported by the analysis previously made in the paper that noted that in certain years, the SAO had audited public expenditures to a very small extent, although the number of audit engagements remained high. Furthermore, this section requires additional and comprehensive analysis and research on how the SAO audits public revenues compared with how it audits public expenditures, taking into account the available information from the annual reports. They show that most of the audited revenues belong to the Budget of the Republic of North Macedonia, whereas the audited expenditures related to the Budget are much lower. In certain years since the SAO's existence, public expenditures from the budget of the funds have hardly been audited.

The relationship between the audit reports and the number of given and implemented recommendations

In this part of the research, the intention is to determine the relationship between the audit reports and the number of given and implemented recommendations (see [Table 6](#)).

From the results, it can be concluded that the number of issued audit reports has positive correlation with the number of recommendations given by state auditors. The results lead to the conclusion that neither the number of reports nor the number of given recommendations has correlation with the number of implemented recommendations. The result is interesting and confirmed by the fact that the European Commission in the last report on the progress of

Table 5.
Spearman's correlation
between the regularity
audit engagements and
the audited public
revenues and audited
public expenditures

Correlations			REG_AUD_ENG	PUB_REV	PUB_EXP
Spearman's rho	REG_AUD_ENG	Correlation	1.000	−0.029	0.260
		Coefficient			
		Sig. (2-tailed)		0.923	0.369
		<i>N</i>	14	14	14
	PUB_REV	Correlation	−0.029	1.000	0.710**
		Coefficient			
		Sig. (2-tailed)	0.923		0.004
		<i>N</i>	14	14	14
	PUB_EXP	Correlation	0.260	0.710**	1.000
Coefficient					
Sig. (2-tailed)		0.369	0.004		
	<i>N</i>	14	14	14	

Note(s): **. Correlation is significant at the 0.01 level (2-tailed)
Source(s): Authors' calculation

the Republic of North Macedonia from 2020 has concluded that regarding the impact of the audit work, the SAO recommendations were not systematically implemented by the audited institutions and that parliamentary oversight of audit report findings still needs improvement. This area deserves special attention and in-depth research on how the current situation could be overcome and how the recommendations given by the state auditors could be implemented to a greater extent.

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The relationship between the SAO development and other internal, external and international factors

Following the literature review and papers that determine factors that influence the development of public audit, this section presents the results of the conducted Spearman's correlation between internal, external and international factors that could affect the development of the SAO (see Table 7).

From the results, it can be stated that there is positive correlation between the development of the SAO and all identified internal, external and international factors, except the political will.

Conclusion and recommendations for future research

The SAO of the Republic of North Macedonia has been in operation for only two decades unlike SAIs in developed countries that have existed for hundreds of years. Although the SAO began working with only nine employees in 1999, by 2020, the number reached almost a hundred. With memberships in international organisations and the implementation of international standards of SAIs, translated into legislation and internal acts, it can be concluded that the SAO is already a mature independent institution that has penetrated deep into the grassroots of society, protecting the public interest.

With this research, it was discovered that the budget of the SAO from its inception until today has increased sixfold, and this increase leads to a rise in the number of employees. However, the budget is negatively correlated with the number of audit engagements. Regarding the conducted regularity audit engagements, it is concluded that there is no relationship with the audited public revenues and audited public expenditures, but there is still a correlation between the audited public revenues and audited public expenditures.

Moreover, in the paper, the relationship of the issued audit reports on the number of recommendations given is demonstrated, but it is concluded that the given recommendations and final reports do not correlate with the implementation of the recommendations. In

Correlations			AUD_REC	GIV_REC	IMPL_REC
Spearman's rho	AUD_REC	Correlation Coefficient	1.000	0.742**	0.341
		Sig. (2-tailed)		0.004	0.254
		N	14	13	13
	GIV_REC	Correlation Coefficient	0.742**	1.000	0.193
		Sig. (2-tailed)	0.004		0.528
		N	13	13	13
	IMPL_REC	Correlation Coefficient	0.341	0.193	1.000
		Sig. (2-tailed)	0.254	0.528	
		N	13	13	13

Note(s): **. Correlation is significant at the 0.01 level (2-tailed)

Source(s): Authors' calculation

Table 6.
Spearman's correlation
between the audit
reports and the number
of given and
implemented
recommendations

Table 7.
Spearman's correlation
between the SAO
development and other
internal, external and
international factors

Correlations		DVLP	CUL_VAL	HUM_CAP	INST_ARR	SOC_ECO	POLL_WILL	INTER_IMP	EUROSAL_INTOSAI	EU
Spearman's rho	DVLP	1.000	0.345**	0.291*	0.470**	0.236*	0.075	0.255*	0.335**	0.374**
			Correlation Coefficient							
	CUL_VAL	69	0.004	0.015	0.000	0.050	0.539	0.034	0.005	0.002
			Correlation Coefficient							
	HUM_CAP	0.345**	1.000	0.608**	0.510**	0.404**	0.086	0.330**	0.381**	0.239*
			Correlation Coefficient							
	INST_ARR	0.004	69	0.000	0.000	0.001	0.480	0.006	0.001	0.048
			Correlation Coefficient							
	SOC_ECO	0.291*	0.608**	1.000	0.625**	0.384**	0.006	0.377**	0.498**	0.297*
			Correlation Coefficient							
	POLL_WILL	0.015	0.000	69	0.000	0.001	0.959	0.001	0.000	0.013
			Correlation Coefficient							
	INTER_IMP	0.470**	0.510**	0.625**	1.000	0.356**	0.203	0.467**	0.518**	0.467**
			Correlation Coefficient							
	EUROSAL_INTOSAI	0.000	0.000	0.000	69	0.003	0.094	0.000	0.000	0.000
			Correlation Coefficient							
	EU	0.236*	0.404**	0.384**	0.356**	1.000	0.205	0.293*	0.448**	0.155
			Correlation Coefficient							
		0.050	0.001	0.001	0.003	69	0.092	0.014	0.000	0.203
			Correlation Coefficient							
		0.075	0.086	0.006	0.203	0.205	1.000	0.285*	0.325**	0.095
			Correlation Coefficient							
		0.539	0.480	0.959	0.094	0.092	69	0.018	0.006	0.440
			Correlation Coefficient							
		0.255*	0.330**	0.377**	0.467**	0.293*	0.285*	1.000	0.688**	0.457**
			Correlation Coefficient							
		0.034	0.006	0.001	0.000	0.014	0.018	69	0.000	0.000
			Correlation Coefficient							
		0.335**	0.381**	0.498**	0.518**	0.448**	0.325**	0.688**	1.000	0.572**
			Correlation Coefficient							
		0.005	0.001	0.000	0.000	0.000	0.006	0.000	0.000	0.000
			Correlation Coefficient							
		0.374**	0.239*	0.297*	0.467**	0.155	0.095	0.457**	0.572**	1.000
			Correlation Coefficient							
		0.002	0.048	0.013	0.000	0.203	0.440	0.000	0.000	0.000
			Correlation Coefficient							
		69	69	69	69	69	69	69	69	69

Note(s): **: Correlation is significant at the 0.01 level (2-tailed)
*: Correlation is significant at the 0.05 level (2-tailed)
Source(s): Authors' calculation

general, conclusions drawn in this research are reduced to the conclusion the European Commission stated in their report regarding the impact of the audit work: the SAO recommendations were not systematically implemented by the audited institutions, and parliamentary oversight of audit report findings still needs improvement.

Finally, in identifying additional internal, external and international factors that could affect the overall development of the state audit, it is found out that there is a correlation between all identified variables with the development of the SAO, except the political will.

To link our conclusions with the findings of previous research in the field, disclosed in the literature review, we can confirm that this research complements the list of factors that have a correlation with the development of state audit as a significant profession. Also, the result obtained is largely in line with the referenced literature, especially in the section on further recognition of the state audit findings and the need for increased implementation of the given recommendations.

Limitations of the paper pertain to the unavailability of certain information concerning the first years of development of the state audit, as well as that the SAO is a relatively young institution and a longer period of time is needed for significant conclusions to be drawn. Another limitation was related to the measurement of the variables from the survey based only on the perception of the state auditors. It may cause this measurement method to be less accurate in describing the actual situation.

Research in the Balkan region on the development of the state audit and SAIs is rare, and we believe that this paper is the first to analyse the development of the SAI from its establishment until today, from an institutional and organisational point of view. The research leaves a lot of room for the examination of other important factors that affect the development of state audit. Given that many scientific researchers have investigated the factors that influence the impact of audit reports, or rather influence the implementation of audit recommendations, the current research leaves a solid basis for comparative studies that could elevate the importance of the results obtained in this paper, as well for desk research across the region.

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Appendix

Survey for determining the factors influencing the development* of the State Audit Office of the Republic of North Macedonia

* By the term "**development**" in this research, we mean improvement in the organisational and institutional capacity of the SAO from its establishment until today, based on the increase in the SAO's budget, the number of employees, the number of audit engagements, the volume of audited public revenues and expenditures, final reports issued, given recommendations, and their implementation.

GENERAL QUESTIONS

1. Your job position at the SAO: _____
2. Your level of education: _____
3. Your work experience at the SAO: _____
4. Are you a Certified State Auditor (CSA)? _____
5. Since its establishment until today, the SAO has been developing in terms of an increase in its budget, the number of employees, the number of audit engagements, the volume of audited public revenues and expenditures, final reports issued, given recommendations, and their implementation 1 2 3 4 5

1. INTERNAL FACTORS

1.1. SAO culture and values

1. You are proud to work at the SAO	1	2	3	4	5
2. You are comfortable with the established culture at the SAO	1	2	3	4	5
3. You feel respected by your team and the SAO	1	2	3	4	5
4. The SAO encourages risk-taking	1	2	3	4	5
5. When employees make mistakes, they receive support	1	2	3	4	5
6. The SAO is committed to diversity and inclusiveness	1	2	3	4	5
7. Evaluate how much the culture and values that are represented by the SAO has influenced its development	1	2	3	4	5

1.2. Human capital at the SAO

1. The SAO supports your professional and career development	1	2	3	4	5
2. Evaluate your satisfaction with working at the SAO	1	2	3	4	5
3. Evaluate the skills that managers possess	1	2	3	4	5
4. Evaluate your motivation while working at the SAO	1	2	3	4	5
5. Evaluate how much the human capital influences the SAO's development	1	2	3	4	5

1.3. Institutional arrangements

1. The policies, systems and processes used by the SAO for planning and managing audit activities to effectively and efficiently coordinate with others in order to fulfil their mandate, influence the SAO development	1	2	3	4	5
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2. EXTERNAL (NATIONAL) FACTORS

2.1 Socio-economic conditions

1. Socio-economic factors, such as income, education, employment, security in the community and social support can significantly affect a society's prosperity. Evaluate how much these factors have an impact on the SAO development	1	2	3	4	5
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2.3. Political will

1. Political will influences the development of the SAO	1	2	3	4	5
2. Political will influences the implementation of the recommendations provided by the SAO	1	2	3	4	5
3. Political will causes an increase the SAO's budget	1	2	3	4	5
4. In general, how big a factor <i>political will</i> is for SAO's development?	1	2	3	4	5

3. INTERNATIONAL FACTORS

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3.1. Current international impetus for reform

1. How much does the international community influence the SAO's development?	1	2	3	4	5
2. How much is the membership in EUROSAT/INTOSAT, as well as the participation in EUROSAT working groups, influence the SAO's development?	1	2	3	4	5
3. How much will the membership of the Republic of North Macedonia in the EU affect the SAO's development?	1	2	3	4	5

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