The influence of profit, revenues and debt on audit prices in large companies: insights from Slovenia

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ABSTRACT
The global financial crisis that erupted in August 2007 following the collapse of the US subprime mortgage market had a significant impact on the financial markets. Ten years ago, Slovenia was confronted with the outbreak of significant financial and economic turbulence, and only in 2017 did the country’s GDP return to pre-crisis levels. Taking into account the fact that the performance of companies deteriorates to a certain extent during a crisis, this paper examines the influence of selected factors on the price of statutory audits for large companies in Slovenia in the period 2010 to 2014. The final sample consists of 177 large enterprises in Slovenia for each year or a total of 885 units (population). The main factors observed were taken from the financial statements. These are operating revenue, profit (loss), and indebtedness of the enterprise. Three hypotheses were tested by regression analysis, ANOVA, and Independent-Samples Median Test. In the research, we found that statistically significant factors of the price of a statutory audit due to the Slovenian Agency for Public Oversight are only the operating income of the audited enterprise. Over the past 40 years, studies have been conducted worldwide to determine audit fees, with a focus on English-speaking countries. This field of research is still in its infancy in Slovenia, and little research has been done on the determinants of the fees charged by the firms that exist here.

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1. Introduction
Several recent papers have examined the performance of firms during the financial crisis of 2008/09 and examined how various factors propagated the shocks. Claessens et al. (2000) examine the performance of manufacturing firms in 42 countries and find that the crisis had a more significant negative impact on firms with higher sensitivity to aggregate demand and international trade. There is a rich literature (Baek et al., 2004; Lemmon & Lins, 2003; Mitton, 2002) that draws attention to corporate

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governance attributes and their influence on firms’ performance during the crisis. Other researchers have examined whether better corporate governance has an impact on the performance of family-owned versus non-family firms during the crisis (Aldamen et al., 2011; Chaston, 2012). Their findings show that better corporate governance, whether family or non-family firms, is associated with better accounting and market performance during the crisis. Erkens et al. (2012) proved that corporate governance had an essential impact on corporate performance during the crisis by influencing the financing policies of companies. Companies play a role in society that goes well beyond the purely economic interest (Montesdeoca et al., 2019). Their results also show that companies with more independent boards of directors and greater institutional ownership achieved more average stock returns during the crisis.

Auditing the financial statements of large companies is the duty of large companies and is defined by the law of each country. The main objective of our study is to examine the audit fees of statutory audits and the main factors influencing the audit fees of the 177 largest companies in Slovenia for five years in the post-crisis period. Based on the theoretical background and literature research, we decided to investigate the influence of these factors: Operating revenues, profit (loss), and debt of the company for the period from 2010 to 2014. The reason why we chose this period is also that the period from 2010 to 2014 was the period of the financial crisis in Slovenia as a result of the global financial crisis. We took a close look at what happened and how the chosen factors influenced the final price of the audits. The motivation for selecting those factors is also that ‘future research may be more usefully directed to individual issues, rather than to meta-analysis of all audit fee studies’ (Hay, 2013, p. 174).

The factors we choose are part of the annual financial statements. The most important financial statements of the company are the balance sheet (the statement of assets and liabilities) and the profit and loss account (the statement of income and expenditure).

Both are prepared based on accounting and financial data and information, based on which management also controls, evaluates, and monitors operating procedures in order to achieve financial and other business objectives of the company. Financial statements are part of the annual report, the mandatory document that large companies in Slovenia must prepare. The factors that we will analyze in detail, such as operating income, profit (loss), and debt, are all part of the annual financial statements and must be audited by certified auditors.

Due to the asymmetry of information between company managers and outside shareholders, auditors are engaged to provide independent assurance that the financial statements are prepared following generally accepted accounting principles (Habib, 2012, p. 2014). The audit of annual financial statements by the Slovenian Audit Act (Article 3) means ‘the audit and evaluation of annual financial statements, data, and methods used in their preparation and, based on this opinion of independent experts, whether the annual financial statements give a true and fair view of the financial condition and economic performance of a legal entity in all material respects’. Slovenian Agency for Public Oversight Auditing (Agencija za nadzor nad revidiranjem - ANR) noted the decrease in audit fees in its annual report for 2014 (ANR, 2014, p. 14).
Studies to determine the test fees have been carried out since 1980 (Simunic, 1980), with a focus on English-speaking countries. This field of research is still in its infancy in Slovenia, and little research has been done on the determinants of the fees charged by the firms that exist here. The contribution and the academic relevance of this work result from the analysis of the determinants of examination fees in the Slovenian context, taking into account data from the crisis and post-crisis period and adding new variables, which allows a better understanding of the phenomenon of interest. It also contributes to the functioning of the market - in terms of understanding how fees are calculated - by providing information for negotiations between companies and their clients. The results obtained may encourage the audited companies to seek new options for auditors, thereby increasing competitiveness in the sector and encouraging the development of new firms.

Following this section, in Chapter 2, we provide an overview of the legal framework, the literature review of possible links between audit fees and selected factors. Chapter 3 presents data, sample, and empirical strategy. The results of the analysis are discussed in Chapter 4. The final chapter is reserved for summarising our findings and making recommendations.

2. Legal basis for auditing in Slovenia

Audit firms in Slovenia are required to submit to the Agency mentioned above under Article 77 of the Slovenian Auditing Law.

According to the Slovenian Companies Act, the sizes of companies include micro, small, medium, and large enterprises (Article 55 of the Companies Act). The criteria for classification, according to Article 55 of the Companies Act, are the following: ‘average number of employees in the financial year, net turnover and value of assets’. This means based on data from the last two consecutive financial years at the balance sheet date if at both times the defined measures are exceeded in cases of defined measures as boundaries between small/medium enterprises and large enterprises.

According to Article 57 of the Slovenian Enterprise Act, large and medium-sized enterprises are obliged to have their annual accounts (annual report) audited. Besides, in connexion with paragraph 8 of Article 55 of the Slovenian Companies Act, the following entities must also be audited: public interest entities, the stock exchange, and companies that are required to prepare a consolidated annual report. Our focus will be on large companies.

Slovenia has been part of the EU since the 2001 Monetary Union European Union and part of the EU since 2007, and the legislation mentioned above is based on European directives.

3. Literature review

In this chapter, we present a literature review of audit price movements and three selected drivers: profit (loss), operating income, and debt.
3.1. Price of audit

An audit must be carried out primarily to a high standard of quality. In a survey in which 37 companies took part and which was carried out in 2011, a correlation between three factors (size of the audited company, quality of the audit, and price of the audit) was examined. It was found that the price of the audit has a statistically significant influence on the quality of the audit. The higher the price of the audit - the higher the quality of the services provided (Yuniarti, 2011, pp. 84–97).

A survey (Stanley, 2011, pp. 18–20) on the development of prices for audit services in the period from 2000 to 2008 aimed to show the impact of prices for audit services in the audited financial year on business events in the following year. Indeed, the trend of falling or rising prices for audit services could be a signal of increasing risk in the company and thus of the existence of specific challenges or risks that a company will have to face in the future (Stanley, 2011, p. 18–20).

The first high-profile analysis of auditing services was conducted in 1977 (Simunic, 1980, pp. 161–190). The survey focused on the United States of America and included 397 companies organized as public limited companies. The purpose of the survey mentioned above was to prove that price competition was predominant on the market for auditing services in the United States of America. For the analysis, the author (Simunic, 1980, pp. 161–190) developed a model of factors that influence the price of audit services. The study showed, among other things, that among all the factors analyzed, statistically speaking, the factor of the size of the company, the value of the shares, the value of the total assets and the amount of profit or loss had the most significant influence on the prices of auditing services (Simunic, 1980, p. 179).

The effects of the last world recession were statistically reflected in the change in the prices of audit services in Malta (Baldacchino & Borg, 2014, p. 36). Partners of the Big4 attribute this to the need to change the number of hours worked to an increased risk to which all companies were exposed. The other managers of smaller audit firms state that despite the increased volume (of audit hours as well as audit risks), they were willing to reduce the price of auditing companies that already had operational problems because they did not want further to worsen the financial situation of the audited company. Thus, they lowered prices in anticipation of higher prices in the coming years when these companies would recover financially (Baldacchino & Borg, 2014, p. 36).

Studies of foreign literature and sources, such as an overview of the prices of audit firms in the four major audit firms at that time, show that the positive historical changes in the prices of audit services were more significant than the historical price decreases. They also show that the long-term positive changes in the prices of audit services were more significant than the long-term price declines (Zhang et al., 2014, pp. 15–16). When analyzing audit prices, for example, in Malta, one can also speak of so-called ‘price rigidity’ (Baldacchino & Borg, 2014, p. 39). The analysis of audit fees over the longer term (Baldacchino & Borg, 2014, p. 36) showed that prices changed only minimally between 2004 and 2011 (the peak of the distribution of price change for revision services was zero). There were several reasons for this: multi-year contracts with auditors, auditing brings potential additional business in practice, the
mandatory and statutory nature of auditing, where clients see it as a necessary evil and do not see the long-term benefits).

The scope and prices of non-audit services also affect the price of audit services. When more than one audit firm provides both audit and non-audit services in a single firm, an effect of price reduction in the name of competitiveness is observed (Ezzamel et al., 2002, pp. 13–35).

The other study found that, in general, prices for auditing services have increased in the rest of the world (Bramwel, 2014). The main reason for this was an increased risk, which was assessed differently by foreign companies. The same was found by Menon and Williams (2001, pp. 115–134), who examined the long-term development of prices for auditing services. An analysis of the prices for audit services in Malta (Baldacchino & Borg, 2014, p. 39) showed a certain price rigidity, i.e., they fluctuated around the same level over the years.

Factors that may influence the final price for the audit of the annual report (the financial statements are part of the annual report) are the following: (Ramzy, 1988, p. 95, p. 174) Size and reputation of the audited entity and its services, audit risk, size, activity, and reputation of the audited entity and the scope of the audit (multinational environment, a group of companies, specifics of the contractor’s activity).

Comparing the prices for audit services of the top 100 Fortune companies paid by them in 2012 and 2014, the average level of payments for these services has increased. In 2012, the prices for auditing services between the individual companies ranged from $1.9 to $90.9 million, and in 2014 from $2.2 to $100.9 million.

In Slovenia, surveys on audit prices were conducted only to a limited extent. It is worth mentioning a survey from 2010 (Tekalec, 2010), in which the factors of pricing for audit services were examined on the sample of companies from the first stock exchange listing in Slovenia between 2006 and 2008. A similar survey was conducted in 2014, also among the sample of companies listed on the stock exchange in 2006, 2008, 2010, and 2012. The main findings were that factors such as the size of the company, the complexity of the company, the risk of the company, the level of debt and the status of the auditing firm had a statistically significant and positive impact on the price of auditing services (Komadina, 2014). The analysis of the influence of the selected factors on the pricing of audit services was carried out on the sample of 83 non-public joint-stock companies in Slovenia for the period 2007–2012 (Pavlč, 2015). Among the main findings of the study conducted by Pavlč (2015, pp. 44–49) are the following statements: ‘that the price of audit services in the previous year influences the price of audit services in the current year, that there is a positive correlation between the audited entity’s revenues and the price of audit services, and that there is a negative correlation between net profit or loss and the price of audit services’.

The analysis of the development of prices for audit services in Slovenia between 2006 and 2012 (Komadina, 2014, p. 56) showed that prices did not fall even during the economic crisis. This may be partly due to the small sample of companies surveyed. Skitek (2009, pp. 58–63) analyzed the competition in prices for audit services on the Slovenian market between 2002 and 2005 and was able to confirm the hypothesis that prices for audit services decreased during this period.
In connexion with the prices for audit services, audit firms are also obliged to report monthly on the planned total number of audit hours and the contractually agreed prices for the audit of financial statements and the notes to the financial statements (Rules on reporting by audit firms, Official Gazette of the Republic of Slovenia, No. 72/10 and 98/13), so that the Public Oversight Audit Agency in Slovenia is informed about all contractually agreed prices and forecasts and the performance of audit hours. Based on the above data, the Audit Slovenian Agency Public Oversight (ANR, 2014, p. 85) states that ‘audit firms do not comply with the recommended guidelines’. The prices for a certified audit hour were between EUR 14 and 113 in the most recent report (ANR, 2014, p. 85). In the previous year (2012/13), the prices for an audit hour ranged between EUR 49 and EUR 226. The Slovenian Public Oversight Audit Agency (ANR, 2014, p. 86) emphasizes that ‘the problem of recent low prices, which were justified by price competition on the market for audit services and the general economic situation in the country, indicates that such behavior threatens the quality of auditing, as carrying out a high-quality audit requires a certain minimum amount of work’.

As we can see, different studies highlight different price movements of audits and different influencing factors. It is noted that the understanding of the determinants of audit costs is controversial; although the same expectation exists as to how certain variables must affect these costs, new empirical approaches are needed to advance knowledge on the subject.

Small samples and a short review period in the previously mentioned surveys in Slovenia are the reason for our survey. We decided to empirically investigate three factors that were mentioned in the Slovenian surveys and also in other surveys as factors that influence audit fees, namely: profit or loss, the amount of operating income and debt of an enterprise.

3.2. Profit or loss

Simunic (1980, p. 174, p. 187) has researched the amount of profit or loss as a factor influencing the price of auditing an annual report. According to his analysis, the profit or loss has been shown to have a statistically significant influence on the price of the audit of an annual report. When auditing companies with an unfortunate financial situation (loss), auditors must increase the scope of the audit procedures, which is reflected in the increase in audit hours to prevent the issue of an erroneous audit opinion (Simunic, 1980, p. 174, p. 187). This was found out by Pavlič (2015, p. 55), which also analyzed the relationship between the profit and loss factor and the price of audit services for Slovenian non-public limited companies in the period 2007 to 2012.

The worse the situation in which the company finds itself, the higher the probability that it will attempt to order financial and accounting information. This increase both the number and complexity of audit procedures (in connexion with planned fraud by the responsible employees), which ultimately has an indirect effect on the price of the audit of the financial statements and the notes to the financial statements (Felix et al., 2001, pp. 11–15).
Based on the above findings of the authors, the complexity of the determination of profit or loss and the related frequency of fraud, we can conclude that the amount of profit or loss has an impact on a higher risk of the balance sheet items presented and a higher audit risk. The latter is reflected in a more considerable amount of audit work that needs to be performed on these items, which indirectly increases the price of auditing the annual report (Travner, 2016).

3.3. Total revenues

A positive correlation between the level of corporate revenues and audit service prices was explained by Whalen and Cheffers (2012, p. 3) in their survey, which included an analysis of trends in audit service prices in the United States of America for the period 2003–2011. In 2006 and 2008, the average sales revenues in the market increased, while at the same time, the average prices for audit services also increased (Whalen & Cheffers, 2012, p. 7).

Maher et al. (1992) used sales revenues as a measure of the factor of company size. Skitek (2009, 58–63) found that statistically, between 2002 and 2005, the price of audit services was most influenced by the factor of asset size and the factor of net revenue. Pavlič (2015, p. 55) has also found that statistically speaking, the factor of total revenues has the most significant influence on the price of audit services.

Companies have the highest propensity to fraud in terms of revenue and assets (Naser & Nuseibeh, 2007, pp. 250–251), which means that the items mentioned are riskier and that the auditors have to pay the most of the time, which affects the number of hours worked and indirectly the price of the total cost of the audit service. Fraud in financial statements almost always (ACFE, 2015, p. 1203) involves overstated assets, income, and profits and losses, which is reflected in the higher amount of audit work that needs to be done on these items (because of the higher risk of these items). Consequently, this increases the cost of auditing the financial statements and the notes to the financial statements.

Based on the above findings of the authors and the complexity of the determination of total revenues and the frequency of frauds in connexion with these accounting items, we can conclude that the facts stated have an impact on a higher risk of the accounting items presented and a higher audit risk. The latter is reflected in a more considerable amount of audit work that needs to be performed concerning these items, which indirectly increases the price of auditing the annual report (Travner, 2016).

We will focus on operating revenues as a factor influencing the price of the audit, as they usually account for the majority of the company’s revenues.

3.4. Indebtedness of a company

For companies with a high debt ratio, the probability that they will not be able to repay liabilities on time in the future is higher on average (El-Gammal, 2012, p. 138). Auditors, therefore, have to increase the scope of the audit, the audit processes, and the planned audit hours, which indirectly affect the price of the audit services (El-Gammal, 2012, p. 138).
In the analysis mentioned above of prices for audit services in Slovenia (Komadina, 2014, p. 50), which included an overview of the prices for audit services of companies listed on the stock exchange in 2006, 2008, 2010 and 2012, the study confirmed a statistically significant influence of the variable level of indebtedness on the prices for audit services; the higher the company’s indebtedness, the higher the average price for audit services.

The factor of the company’s indebtedness affects the price of audit services, but the correlation is not necessarily positive. A deterioration of the economic and financial situation at home and abroad may put pressure on the prices for audit services (negative correlation). From the aspect of risk management in connection with the assumption that higher indebted companies are generally exposed to greater audit risk, it can be concluded that the higher the level of indebtedness, the higher the price of audit services (positive correlation) (Travner, 2016).

4. Research: hypothesis and data gathering

The purpose of the study was to analyze the influence of selected factors on the price of auditing the financial statements and the notes to the financial statements. Financial reports are part of the annual report. The preparation of the annual financial statements and the annual report is obligatory for large companies under the Slovenian Companies Act, and Slovenian Accounting Standards, which are close to International Accounting Standards. The analysis covers the factors related to financial statements, based on a review of references and literature, which should have a significant impact on the price of an audit of the annual report (financial statements) on the Slovenian market for audit services.

Operating income, profit (loss) and debt-equity ratio were selected as independent variables for the following reasons:

1. We can conclude that the amount of profit or loss has an impact on a higher risk of presented accounting items and higher audit risk. The latter is reflected in a more considerable amount of audit work that needs to be performed on these items, which indirectly increases the price of auditing the financial statements and the notes to the financial statements (Travner, 2016).
2. We will focus on operating revenues as a factor influencing the price of the audit, as they usually account for the majority of the company’s revenues.
3. Corporate indebtedness requires a more extensive scope of the audit, more audit processes, and planned audit hours, which indirectly affect the price of audit services.

The arguments in the theoretical background and the literature review lead us to four main hypotheses that describe the influence of factors from financial statements on audit fees in Slovenia:

H1: A large company with a higher net profit pays on average more for an audit of its financial statements and the notes to the financial statements.
Simunic (1980, p. 174, p. 187) has examined the amount of profit or loss as a factor influencing the price of auditing an annual report. According to his analysis, profits or losses have been shown to have a statistically significant impact on the price of an audit of financial statements and the notes to the financial statements. Regarding the size of the company, there is evidence ‘that audits of larger clients require more audit engagement to provide reasonable assurance, resulting in higher audit fees’ (Zaman Groff et al., 2017, p. 926).

H2: A large company that reported a net profit in a reviewed year paid a lower price for the audit of its financial statements and the notes to the financial statements than a large company that reported a net loss.

The worse the situation in which the company finds itself, the higher the likelihood that it will attempt to put financial and accounting information in order. This increase both the number and complexity of the audit procedures (in connexion with planned fraud by the responsible employees), which in the end indirectly affects the price of the audit of the financial statements and the notes to the financial statements (Felix et al., 2001, pp. 11–15).

H3: A large company with higher operating revenues pays on average more for the audit of its financial statements and the notes to the financial statements.

A positive correlation between the level of corporate revenues and the prices for audit services was explained by Whalen and Cheffers (2012, p. 3) in their study, which included an analysis of trends in audit prices in the United States of America for the period 2003 to 2011.

H4: On average, a large company with a higher leverage ratio pays more for the audit of its financial statements and the notes to the financial statements.

In the analysis of prices for audit services in Slovenia (Komadina, 2014, p. 50), which included an overview of the prices for audit services of listed companies in 2006, 2008, 2010 and 2012, the study confirmed a statistically significant influence of the variable level of indebtedness on the prices for audit services; the higher the level of indebtedness of the company, the higher the average price for audit services.

Hypotheses 1, 2, and 3 were tested by regression analysis and ANOVA hypothesis

Hypotheses 1, 2, and 3 were tested by regression analysis and ANOVA hypothesis 1.1 Independent-Samples Median Test.

The population consists of all large companies that were classified as continuing enterprises in Slovenia as of 31 December 2014 and which were required to audit their annual reports following Article 57 of the Slovenian Companies Act.

A total of 63,590 annual reports for 2014 were submitted to the AJPES (AJPES, 2016, p. 32). Of these, the most significant number (59,940) were micro-enterprises, 2,303 small enterprises, 719 medium-sized enterprises, and 628 large enterprises. Most large enterprises come from the Central Slovenia region (45.9%). Most large enterprises are privately owned (87%). Large enterprises are most numerous in the following economic sectors: Manufacturing (31.7%), wholesale and retail trade (18.7%), professional, scientific and technical activities (12%), finance and insurance (10.4%) and 4% each in the following sectors: Construction, information, and communication, a supply of electricity, gas, steam and air conditioning and logistics.
The reasons for selecting the population of large enterprises were as follows: Large enterprises accounted for 38.6% of all persons employed in Slovenia, 54.4% of total revenues, and 54.1% of total expenses. Large enterprises generated 50.9% of the total profit in Slovenia in 2014. Large enterprises are obliged to audit their annual accounts under the Slovenian Audit Act.

The sample consists of 177 randomly selected large companies that were operating in Slovenia on 31 December 2014. The sample unit was a large company that was operating as a continuing operation in Slovenia as of 31 December 2014.

The data were collected through the Agency of the Republic of Slovenia for Public Legal Records and Related Services (AJPES), where audited annual reports were sought for 177 randomly selected large companies through the Annual Report Publishing Service. Financial data was sought for the following reporting dates: 31 December 2010, 31 December 2011, 31 December 2012, 31 December 2013 and 31 December 2014.

For research purposes, a total of 885 audited annual reports for the period from 2010 to 2014 were reviewed. This means 177 large companies over five years (between 2010 and 2014) and four original data parameters for each audited company.

The data on the price of an audit of the financial statements and the notes to the financial statements were collected manually via the AJPES portal (Public Posting or Annual Reports on the AJPES portal) of the annual report publication service. According to article 69 of the ZGD-1, companies are obliged to disclose the costs of the audit of the financial statements and the notes to the financial statements, although the form of disclosure is not prescribed.

Also, the following data parameters were obtained for selected large companies from publicly available sources: Total revenues, net profit (loss), and debt-equity ratio according to the Slovenian Accounting Standards. Profit after tax was taken as net profit. The debt-equity ratio was calculated as follows: \( \frac{\text{(financial and operating liabilities/total equity and liabilities)}}{100} \).

The following challenges were encountered in collecting data for the price of an audit of the annual report (Travner, 2016):

- The company failed to disclose the costs of auditing the financial statements and the notes to the financial statements.
- The company stated a total amount for all audit services but failed to disclose the amount for the audit of the annual report.
- The company disclosed a total amount for all audit services for all large companies audited in total, but failed to disclose the specific amount for the audit of the financial statements and the notes to the financial statements, and the amount for the large individual company audited.
- The company disclosed the amount for the audit of the annual report of all companies in the group and consolidation purposes but failed to disclose the specific amounts. In such cases, where the same auditor audited the group, the financial information for the group was disclosed together with the costs of auditing the financial statements and the notes to the financial statements for the group.
• The company disclosed the stated costs for the audit of the annual report, but not the contract value (the stated costs for the audit of the annual report in the year under review consisted of the work of the audit of the annual report of the previous year in connexion with the audit of the financial statements and the work of the audit of the annual report of the current year in connexion with the pre-audit). This poses a particular challenge in data collection in cases where the company has experienced a change of audit firm.

• The firm indicated an amount for the audit of the financial statements and the notes to the financial statements, but also included non-audit related services (e.g., translation of the annual report).

• The firm indicated an amount for the audit of the financial statements and the notes to the financial statements, but also included interim audits (audit of individual items, reporting, etc.)

• The form of disclosure of the amount spent on the audit of the financial statements and the notes to the financial statements is not specified (the firm may disclose the amount spent on the audit of the financial statements and the notes to the financial statements in a free place).

Due to deficiencies in the disclosure of data on the cost of auditing the annual report and/or lack of financial data, selected data series do not contain all the selected parameters. Such cases were wholly excluded from further processing (regardless of the number of missing data). There were 23 such cases of large enterprises with the reasons for exclusion related to missing financial data or changes in the size of the large enterprises. The final sample consists of 177 large enterprises in Slovenia for each year or a total of 885 annual reports.

5. Results of research and discussion

The large companies in the final sample audited had a total turnover of EUR 112.2 billion in the period under review (on average, EUR 127 million per company audited). It was found that in the period from 2010 to 2014, the average operating revenues increased from 2010 to 2012 and decreased from 2012 to 2014. The average net profit was highest in the period under review in 2011. The financial data for each year are shown in Table 1.

The large companies in the final sample studied had an average debt ratio of 80.17% (the maximum debt ratio was 107.33% in 2011). It was found that the average debt ratio of the large companies increased in the period under investigation and was very volatile (minimum 53% and maximum 107%), which is unusual. The financial data for each year are presented in Table 2.

The average price for an audit of the financial statements and the notes to the financial statements for a large company in Slovenia during the reporting period was EUR 21 182 (see Table 2). The highest average price for an audit of the annual report was recorded in 2011, the lowest in 2013. The table shows that prices increased overall between 2010 and 2011 and between 2013 and 2014 but decreased between 2011 and 2013, given that the decrease in average prices of an audit of the financial
statements and the notes to the financial statements in the period in question was more significant than the increase in the other two periods (see Table 2).

### 5.1. Testing the influence of net profit on audit fees of financial statements and the notes to the financial statements

First, we tested the hypothesis: A large company with a higher net profit pays on average more for an audit of its financial statements and the notes to the financial statements.

To confirm the hypothesis, a regression analysis was carried out, and a correlation was found between the amount of net profit and the price paid for an audit of the annual report.

The Pearson correlation coefficient was statistically significant (at 0.000) and stood at 0.212. The net profit of a company and the price for an audit of its financial statements and the notes to the financial statements are weakly positively correlated variables (see Table 3).

The regression analysis showed the following correlation (Table 4):

\[
\text{Price of the audit} = 20,781 + 0 \times \text{Net profit of the company}
\]

This means that if the net profit of a company increases by EUR 1 million, the price for an audit of the annual report increases by EUR 0.

The correlation coefficient \(R = 0.212\) indicates a medium-strong linear relationship between net profit and the cost of the audit (Table 5). The determination
coefficient $R^2 = 0.045$, which means that in the case of an independent variable, net profit can only explain 4.5% of the variability of the dependent variable ‘Audit fee’ (Table 5). Table 6 shows that the significance is 0.000, which means that the model as a whole is statistically significant.

Since the coefficient of net profit is zero (Table 4), no value can be attributed to the amount by which the audit fee increases as net profit increases.

In the light of the results of the statistical processing of the data, it can be confirmed that there is a significant positive correlation between the amount of a company’s net profit and the price of an audit of its financial statements and the notes to the financial statements. However, there can be no confirmation for hypothesis 1 that a large company with a higher net profit pays more for an audit of its annual report.

To clarify the results, additional tests of the prices of examination performances between the two groups were carried out. The first group consisted of large companies that reported a net profit, while the second group consisted of large companies that reported a net loss.

We also verified the next hypothesis:
H1.1: Companies that reported a net profit in a year under review paid a lower price for the audit of their financial statements and the notes to the financial statements than companies that reported a net loss.

We tested the null hypothesis: the medians of the ‘audit price’ are the same across categories of ‘Net Income’. To test the null hypothesis, we used the Independent-Samples Median Test. The result of the calculation in Table 7 showed that the Independent-Samples Median Test price of the audit was significant at the level (Sig.) 0.003, it is lower than 0.05. The test was statistically significant, we rejected the null hypothesis, from which it can be concluded that companies that reported a net profit in a reviewed year paid a lower price for the audit of their annual reports than companies that reported a net loss (H.1.1 was confirmed).

The result did not seem unusual, as an audit of a large company that reported a net profit in a given financial year is, on average, subject to lower audit risk. Greater caution should be exercised in cases where a firm reports a loss and, as part of its cost management, attempts to reduce the price of its audit services. For large companies in Slovenia, the reduction in the price of audit services for companies reporting a loss between 2010 and 2014 did not prove to be statistically significant.

Large companies that reported a net profit had an average price for an audit of the financial statements and the notes to the financial statements (EUR 20,624), which was EUR 2,714 lower than the average price of companies that reported a loss (Table 8).

### Table 7. Testing the null hypothesis.

| Null hypothesis | Test                      | Sig.  | Decision            |
|-----------------|---------------------------|-------|---------------------|
| The medians of ‘price of audit’ are the same across categories of ‘Net Income’. | Independent-Samples Median Test | 0.003 | Reject the null hypothesis |

Source: Authors’ calculation.

### Table 8. Share of annual reports by net profit (loss).

| Large enterprise | Number of annual reports | Share | The average price of an audit of financial statements and the notes to the financial statements, EUR |
|------------------|--------------------------|-------|-------------------------------------------------------------------|
| That disclosed a net profit in the year under review | 703 | 79% | 20,623.89 |
| That disclosed a net loss in the year under review | 182 | 21% | 23,337.67 |
| Total | 885 | 100% | 21,980.78 |

Source: Authors’ calculation.

5.2. Testing the influence of total operating revenues on the price of an audit of the annual report

Against the background of the results of domestic (Pavlič, 2015; Skitek, 2009) and foreign authors (Maher et al., 1992; Simunic, 1980), who succeeded in demonstrating a statistically significant influence of a company’s turnover on the price of an annual audit, the hypothesis was put forward that large companies with higher operating revenues pay more on average for an annual audit.
Reason (2010, p. 39) and Whalen and Cheffers (2012, p. 3) conclude that the price of audit services decreases as operating revenues decrease. Since operating revenues are among the riskier items, they require more time for the audit, which affects the price of audit services (Naser & Nuseibeh 2007, pp. 250–251).

Our second hypothesis was used to test whether a large company with higher operating revenues pays on average more for the audit of its financial statements and the notes to the financial statements.

To confirm this hypothesis, a regression analysis was carried out, and a correlation was found between the factor of the number of operating revenues and the amount of the price for an audit of the annual report. The Pearson correlation coefficient was statistically significant (at 0.000) and stood at 0.553 (Table 9). The operating income of a company and the price for an audit of the financial statements and the notes to the financial statements are moderately positively correlated variables.

The regression analysis showed the following correlation (Table 10):

\[
\text{Price of the audit} = 15,362 + 4.6 \times 10^{-5} \times \text{Operating revenue of the firm}
\]

This means that if a company’s operating income increases by EUR 1 million, the price of an audit of the annual report increases by EUR 46.

The correlation coefficient (\(R = 0.553\)) shows a strong linear relationship between operating income and the cost of the audit (Table 11). The coefficient of determination \(R^2 = 0.306\), which means that, for an independent variable, the ‘operating income’ can explain only 30.6% of the variability of the dependent variable ‘price of the audit’ (Table 11). Table 12 shows that the significance is 0.000, which means that the model as a whole is statistically significant.

**Table 9.** Correlations.

|                  | ‘Price of an audit’ | ‘Operating revenues’ |
|------------------|---------------------|----------------------|
| Price of audit   | 1                   | 0.553                |
| Sig. (2-tailed)  |                     | 0.000                |
| N                | 885                 | 885                  |
| Operating Pearson correlation revenues | 0.553 | 1 |
| Sig. (2-tailed)  | 0.000               |                      |
| N                | 885                 | 885                  |

Source: Authors’ calculation.

**Table 10.** Coefficients.a

|                      | Unstandardized coefficients | Standardized coefficients |
|----------------------|-----------------------------|---------------------------|
|                      | B                            | Std. Error                | Beta          | t     | Sig.  |
| (Constant)           | 15361.970                   | 601.746                   |               | 25.529| 0.000 |
| ‘Operating revenues’ | 4.589E-5                    | 0.000                     | 0.553         | 19.746| 0.000 |

aDependent variable: ‘Price of an audit’.
Source: Authors’ calculation.

**Table 11.** Results of linear regression for the impact of operating revenues to the price of the audit.

|              | R    | R square | Adjusted R square | Std. error of the estimate |
|--------------|------|----------|-------------------|----------------------------|
|              | 0.553a| 0.306    | 0.306             | 15606.78928                |

aPredictors: (Constant), ‘Operating revenues’.
Source: Authors’ calculation.
In the light of the results of the statistical processing of the data, it can be confirmed that there is a significant positive correlation between the level of a company’s operating income and the price for an audit of its financial statements and the notes to the financial statements, and hypothesis 2 that a company’s income has an impact on the price for an audit of its financial statements and the notes to the financial statements can be confirmed. A large company with higher operating revenues pays on average more for an audit of its financial statements and the notes to the financial statements.

It needs to be stated that the authors tested the correlations in general under this research, with results that may be independent of the financial crisis.

5.3. Testing of the influence of debt ratio on the price of an audit of an annual report

The analysis of prices for audit services in Slovenia (Komadina, 2014, p. 50) cited above showed that a large company with a higher debt ratio pays on average more for its audit services. In contrast, Baldacchino and Borg (2014, p.36) quote the responses of directors of smaller companies who, despite an increased workload (both audit hours and audit risk), were prepared to reduce the prices of audit services for companies that had previously struggled with performance problems, without wishing further to weaken the financial position of the audited company. They lowered prices in anticipation of higher prices in later years, when firms had recovered financially (Baldacchino & Borg, 2014, p. 41).

Given the conflicting results, there was a desire to examine the influence of the debt ratios of large companies on the prices for audit services in Slovenia between 2010 and 2014, while at the same time postulating Hypothesis 3 that large companies with higher debt ratios pay more on average for an audit of the financial statements and the notes to the financial statements.

Table 12. ANOVA.a

| Source                  | Sum of Squares | df   | Mean Square   | F      | Sig.  |
|-------------------------|----------------|------|---------------|--------|-------|
| Regression residual     | 9.497E + 10    | 1    | 9.497E + 10   | 389.894| 0.000b|
| Total                   | 2.151E + 11    | 883  | 243571871.6   |        |       |
|                         | 3.100E + 11    | 884  |               |        |       |

aDependent variable: ‘Price of an audit’.

bPredictors: (Constant), ‘Operating revenues’.

Source: Authors’ calculation.

Table 13. Correlations.

|                   | ‘Price of an audit’ | ‘Debt ratio’ |
|-------------------|---------------------|--------------|
| Price of audit    | 1                   | –0.046       |
| Sig. (2-tailed)   |                     | 0.170        |
| N                 | 885                 | 885          |
| Debt              | –0.046              | 1            |
| Pearson correlation ratio | 0.170              |             |
| Sig. (2-tailed)   |                     |              |
| N                 | 885                 | 885          |

Source: Authors’ calculation.

In the light of the results of the statistical processing of the data, it can be confirmed that there is a significant positive correlation between the level of a company’s operating income and the price for an audit of its financial statements and the notes to the financial statements, and hypothesis 2 that a company’s income has an impact on the price for an audit of its financial statements and the notes to the financial statements can be confirmed. A large company with higher operating revenues pays on average more for an audit of its financial statements and the notes to the financial statements.

It needs to be stated that the authors tested the correlations in general under this research, with results that may be independent of the financial crisis.
To test the hypothesis, a regression analysis was carried out, and a correlation was found between the factor of the debt ratio and the price level for an audit of the annual report. Since the Pearson correlation coefficient was not statistically significant (significance is 0.170 in Table 13), the debt ratio and the price of an audit of the financial statements and the notes to the financial statements cannot be confirmed as correlated.

Moreover, the correlation coefficient ($R = 0.046$) indicates a weekly linear relationship between the debt ratio and the cost of auditing (Table 15). The coefficient of determination $R^2 = 0.02$, which means that, for an independent variable, the ‘debt ratio’ can explain only 0.2% of the variability of the dependent variable ‘audit fee’ (Table 15). Table 14 shows a negative correlation, but it is statistically insignificant (Sig. $= 0.170$, it is much higher than 0.05) Table 16 shows that the significance is 0.17, which means that the model as a whole is statistically insignificant.

Hypothesis 3 that a large company with a higher debt ratio pays on average more for an audit of its annual report cannot be confirmed.

6. Conclusions

The financial crisis, which has affected the economies of the EU and Slovenia in particular, created a research environment that made it possible to examine the impact of selected factors on the price of auditing.

The paper supplements the existing audit literature with the study from Slovenia, where audit fees for large companies are not high. We also wanted to show whether a selected factor has an impact on audit fees in Slovenia. The theoretical basis was first examined in the literature and tested in a specific environment of audit fees for
large companies in Slovenia. We found that companies with a loss have a higher audit price than a company with a profit, and companies with higher operating revenues have higher audit costs. We also found that higher profits do not influence the level of the audit fee and that the level of the company’s debt has no influence on the higher costs of the audit.

The investigation was limited geographically to the market for audit services in Slovenia and in time to the years 2010 to 2014. The investigation was limited to a review of the prices for the audit of the financial statements and the notes to the financial statements in the population of large companies operating on 31 December 2014.

Among limitations of the approach, it needs to be stated that the factors of potential influence on the audit prices are explored in line with the previous research and literature. Some previous research relates to the crisis period, and some do not. We have chosen the period of financial crisis. However, the results of the survey may also be useful outside the financial crisis.

6.1. Recommendations

In Slovenia, it would be necessary to change the value attitude towards the opinion of certified auditors. It is inconceivable that the price for auditing a large company with at least EUR 20 million in assets and/or at least 40 million in revenues was, on average, EUR 21,182, which corresponds to 0.11% of the audited assets and 0.05% of the audited operating revenues.

Concerning the audit profession, we recommend that the Public Oversight audit profession, together with the Agency, other regulatory authorities, and professional institutions, in dialogue with large companies, intensify activities to strengthen and restore awareness and confidence in the professional and responsible work of certified auditors. Namely, that an effective system of corporate governance requires an effective financial reporting system (financial statements), and that an effective financial reporting system requires an orderly system of financial accounting (Baker & Wallage, 2000, p. 173). Auditors have an invaluable role to play in the provision of such financial statements by companies.

Because of audit fees, a market test of the concentration of audit firms is recommended. Studies show, for example, that market concentration among auditors indirectly improves audit quality through higher audit fees (Huang et al., 2016, p. 212). The other study also empirically examines the relationship between product market competition and audit fees and concludes that auditors charge higher fees to firms in a more competitive industry (Wang & Chui, 2015, p. 139).

If there is to be a positive legacy from the financial crisis, it must be in the lessons that market participants have learned from challenging times. Like all stakeholders in the economic crisis, auditors must also try to learn lessons from the crisis. Auditors play an essential role in the financial markets by promoting trust in the financial information provided by clients and by acting as a discipline for directors and management. If there is one great lesson from the crisis for auditors, it is that more may need to be done to explain the value of audits to those outside the audit process.
Providing more information about the discussions between auditors and clients could increase the value attributed to the audit and thereby increase market confidence.

6.2. Outlook and further research

This paper is an essential contribution in the field of planning audit fees in Slovenia and is also useful for other countries, as the influencing factors in international financial reports are widespread in all countries of the world. It is also recommended to conduct a survey and test other factors if they have an impact on the price of the audit. Similar surveys are recommended for the future, with a comparison with other countries or groups of countries in Europe, e.g., OECD or transition countries. Indeed, OECD countries have probably grown faster in the last half-century (except for the First and Second Industrial Revolutions) than in other historical periods (Škare & Tomic, 2014), and transition countries represent a group of countries with very similar starting conditions (Škare & Tomic, 2014).

For further research, the authors propose to examine how the correlations calculated in this paper would look, especially in the crisis period. To answer the question of how the crisis affects these correlations, a comparative analysis should be carried out to check the correlations of selected variables during the crisis and in the pre-crisis or post-crisis period, which could include a dummy variable for the years during the crisis period.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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