

Auditor's Remuneration and Audit Effort: *Can Variable Audit Fee Components affect Audit Quality?*

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Abstract: *This paper examines the impact of fixed and variable audit fees on the amount of audit effort invested. Furthermore, it investigates whether variable remuneration components are perceived as attractive. The study uses a case-based within-subject experimental research design. By manipulating the form of remuneration, it is examined how much audit effort is invested. In total, 93 persons participated in the experiment. The results show that variable auditor's remuneration is considered more attractive compared to fixed compensation. Moreover, data analysis indicates that a variable remuneration contract leads to higher audit effort compared to a fixed audit fee contract. This study contributes to the stream of literature dealing with audit quality. In particular, it offers new insights into the relationship between remuneration and audit effort. Although variable audit fees have the potential to increase audit quality, in many jurisdictions, they are prohibited by law. This study intends to stimulate a discussion and potential further developments concerning current regulations. This study uses students with a major in auditing as proxies for practitioners. Although previous studies have shown that students certainly make similar decisions as auditors, future research should integrate practitioners for further investigation of the topic. Also, future research should address the interaction of remuneration and person-specific factors such as experience or risk preference.*

Keywords— audit effort; remuneration; variable audit fee components; audit quality; experimental analysis

1. INTRODUCTION

The quality of financial statements is associated with the quality of the auditor's performance. Audit quality has been a topic of research in the area of financial statement audits for many years. As far as research on this topic is concerned, the audit fees represent an important starting point as they are on the one hand a substantial part of the income of the auditor or the audit firm and on the other hand represent expenses of the audited company (=auditee). As the auditee mainly pays the remuneration, the independence of the auditor is often discussed in this context. A lack of auditor independence may, in particular, affect the audit opinion and the audit effort. As audit effort and audit fee do relate, the audit fees are interrelated with the audit quality. Therefore, audit fees are often used as a surrogate for the audit quality of financial statements.

The remuneration of an auditor may be designed as a fixed fee or a cost-reimbursement fee (Palm-rose, 1989). Hence, remuneration can depend on the duration and scope of the audit as well as qualification of the auditor, or it is designed in the form of fixed-rate fees (Marten, Quick, & Ruhnke, 2011). Both types of remuneration represent only an insufficient incentive for the auditor. Various studies use variable remuneration for auditors to better understand the parameter. However, this is forbidden by law as, e.g. Art. 4 of the European Audit Regulation (EU Reg. 537/2014) and Art. 25 of the European Audit Directive (EU Dir. 2006/43/EC lastly changed through EU Dir. 2014/56/EU) as well as the Code of Ethics.

Although a variable and contingency-related remuneration of the auditor is currently not allowed within the European Union, this paper investigates, whether a variable component of the fee would contribute to higher audit quality. Thus, we examine the effect of a variable remuneration on audit quality, measured as audit effort concerning the audit fee. Throughout the paper, we want to answer the research question, whether a variable design of the auditor's remuneration can contribute to the increase of audit effort per unit of money.

The intention of this paper is not to claim a radical change of the regulatory requirements with re-spect to the audit fees, but rather to stimulate a discussion and thought-provoking impulse in respect to the current rules of the pricing.

We specifically analyse whether in consistent scenarios, audit quality changes through variable re-muneration components - measured as audit effort per unit of money (increasing) or as monetary units per audit effort (sinking). In principle, we assume that auditors also respond to incentives. In our case, the incentive structure is built by fixed and variable remuneration components.

To answer the research question, an experiment was selected as suitable, empirical method. Overall, the experiment was conducted in a within-subjects design with 93 students, whereby each experiment participant had to make decisions in 8 scenarios. The participating students were bachelor's and master's students with their major in auditing or accounting.

Our results are threefold. Firstly, we find that a remuneration with variable components is assessed to be more attractive than contracts solely, including fixed

remuneration. Secondly, we find that intrinsic motivation (40.9 %) and remuneration (33.3 %) are the main drivers for accessing a scenario to be favourable. Thirdly, we asked the participants to assess various scenarios and find that a variable remuneration component increases audit quality – in terms of audit effort per unit of money.

The remainder of the paper is structured as follows. First, the relation between audit effort and audit quality will be discussed, then the relevancy of incentive design and compensation are presented. After giving the theoretical background the derivation of hypotheses, the description of the empirical investigation and the results follow. The paper ends with a short conclusion.

2. LITERATURE REVIEW

2.1 Audit quality and audit effort

Audit quality is discussed, described and defined as an abstract and far-reaching term of different scientific and professional points of view. Due to the difficult ascertainability and quantifiability, measuring audit quality is challenging. Watkins, Hillison and Morecroft (2004) discuss two definition approaches. Firstly, Audit quality can be identified and measured based on the degree of compliance with relevant regulations or on the basis of influencing factors. Secondly, the definition, according to DeAngelo (1981), states audit quality as the probability estimated by the market, that a misrepresentation in the financial statements is unrecognised or unreported. Copley and Doucet (1993) as well as Ruhnke (2003) consider audit quality as standard oriented and measure quality based on the number of complied regulations. As the information about the decision-making process is often not publicly available, for the observation and measurement of the audit quality, various surrogates are used (Knechel, Krishnan, Pevner, Shefchik and Velury, 2013).

Several studies deal with the relationship between audit effort and audit quality. As a surrogate for audit quality, Caramanis and Lennox (2008) use earnings-management measures and show that - by reducing the work hours - audit quality is negatively affected. Lobo and Zhao (2013) show in this context that an increased correction of annual accounts data occurs in the course of increased audit effort and thus, higher audit quality is reached.

DeFond and Zhang (2014) describe the generally positive relationship of increased audit effort on the remaining risk of undetected misstatement and discuss that increased audit effort leads to a higher audit quality due to risk reduction. Also, Pummerer, Steller and Baldauf (2013) show in their model that additional audit effort reduces the risk of damage and thus increases the quality of audits. Graschitz (2017) examines the relationship between risk aversion and audit quality and shows that risk-averse auditors use more working hours in order to minimise the risk of damage and liability and to achieve higher audit quality. Utami and Nahartyo (2017) show that effort in terms of interactive reviews and the effectiveness of group support systems increase the accuracy

of audit decisions by reducing the ambiguity of information. Haid (2018) points that in the case of declining information quality, more effort is invested in counteracting the increasing difficulty of a task. From this, it can be concluded that increasing audit effort positively influences the quality of audits. Furthermore, the audit model by Ruhnke and Lubitzsch (2010) shows that audit certainty is determined by the quantity and quality of audit evidence, which in turn depends on audit effort.

The positive influence of audit effort, especially the risk-reducing and error detecting effect on audit quality is shown in many studies and analyses. Regularly, the audit effort is used as a surrogate for audit quality.

2.2 Incentives and Remuneration

Incentives for an auditor to act lawfully and carefully are difficult to measure in their occurrence and intensity; based upon recent research, however, some aspects or factors have been identified, which increase audit quality. For instance, conscientiousness, commitment to the profession or liability regulations as well as abuse within the course of the audit might represent such incentives for the auditor (Martin et al., 2011).

A number of incentives to increase the motivation of work exist. The two-factor theory, according to Herzberg (2003), treats the impact of incentives on work motivation and satisfaction of an employee. The theory distinguishes between motivators, these are factors that lead to greater satisfaction and higher motivation, and so-called hygiene factors, which may result in discontent and lack of motivation in case of absence or suboptimal design. Motivators are basically of internal, stressing work itself nature, and hygiene factors of external nature

Remuneration (Herzberg, 2003) is associated with the external factors and does not regularly lead to a permanent increase in motivation because of the affiliation to the hygiene factors. Nevertheless, short-term positive effects on motivation are possible. According to motivation theory, intrinsic incentives resulting from work itself are needed to increase the motivation to work permanently. However, remuneration as an extrinsic reward can strengthen the intrinsic motivation to work and therefore cause permanent effects on satisfaction and motivation, if remuneration is seen as confirmation of skills and competence. Although the theory of motivation does not consider remuneration as a (long-term) motivator, in auditing, it is regarded as the most important incentive at all (Schreyögg & Koch (2015).

There are two kinds of fee design and incentive design in auditing – fixed-fee contracts and cost-reimbursement contract. If a fixed fee - regardless of the duration of the audit – is agreed upon before conducting the audit, it is referred to as a fixed fee contract; otherwise, if the fee is dependent on the duration of the audit (such as hourly or daily rates), it is a reimbursement of cost fee. Regarding the fixed-rate fee, there is the disadvantage that there exists an incentive for the auditor to perform the audit as cost-effective as possible,

which may lead to a lower quality of audits (Palmrose, 1989). Fixed-rate fees may therefore only be agreed upon if they are appropriate in terms of amount and adjustments are possible in case of a higher audit effort (Marten et al., 2011). Reimbursements of cost- fees, however, include the duration and the scope of the audit and do not bear the described disadvantage of a potential reduction in audit quality by cost optimisation (Palmrose, 1989).

Because both forms of remuneration do not directly depend on audit quality – in terms of an accurate audit opinion – there is no incentive for the auditor to carry out proper audits but rather to act in a profit-maximizing way.

If the remuneration form provides no incentive to increase audit quality, it requires other factors which are of intrinsic nature, for example, professional obligation or extrinsic nature such as liability. Hence, when reviewing the motivation research literature, we found that variable remuneration might increase motivation and performance. Regarding how and to which extent variable remuneration increases motivation, an ongoing debate takes place. Specifically, the use and effects of variable compensation agreements are being addressed. In light of that open question, we aim to test, which effects of variable fee components exist in the auditing context.

3. HYPOTHESES AND RESEARCH DESIGN

3.1 HYPOTHESES

After reviewing the theoretical fundamentals of variable compensation of an auditor, it can be assumed that a variable compensation component can positively affect the motivation to work. Hence, audit fee contracts, including variable components, should be assessed to be more attractive. Based on that, we formulate the following hypothesis:

H1: Audit fees with a variable component are seen as attractive.

Variable components of the remuneration contract should positively affect the motivation to work. The motivation to work should lead to a more accurate and in-depth audit. In the context of the auditor, it is assumed that a higher motivation will lead to more audit effort per unit of money and consequently to higher audit quality. Hence, the following hypothesis is formulated:

H2: A variable compensation component influences audit effort in the remuneration of the auditor.

These two hypotheses provide an operationalization of the research question if a variable remuneration of the auditor increases the audit effort per unit of money.

3.2 Research design

Due to the novelty of the issue and the absence of variable remuneration systems, no real-life-data are available. Therefore, for collecting suitable data, a laboratory experiment seemed to be the most proper way of gathering information about the “auditor’s behaviour”. An experiment

is a repeatable test arrangement under controlled conditions in which the manipulation of one or more independent variables is made in a way that enables the examination of causal connections (Zimmermann, 1972). The experiment itself represents no special type of data collection or data measurement. Still, it is used to check already theoretically set relations together with the pre-dominant aim and purpose to test theory-based hypotheses and assumptions (Atteslander, 2008). An advantage of experiments besides the replicability is the possible isolated consideration of individual potentially conduct affecting variables or factors (Plott, 1991). In addition to several advantages also problems, difficulties and disadvantages are inherent, such as the selection of the participants of the experiment, the internal or external validity and various, sometimes uncontrollable disruptive factors. Also, in the field of accounting or the financial statement audits, the application of experiments to analyse auditors’ behaviour increases (Stefani, 2003).

The experiment was structured as follows: First, it is to be found whether from the perspective of the auditor remuneration with a variable share is perceived as an attractive or increasing incentive. For that objective as well as for control purposes questions regarding the attractiveness of variable components of remuneration contracts, the motivation to work and the relation of audit effort and audit quality were asked.

Regarding hypothesis H2, whether a variable compensation component for the auditor affects the audit effort (per unit of money), a case study was developed, which contained information and the financial statements of a fictitious company. Besides information about the company, the relation between audit effort and audit quality (derived from literature) is described (as discussed before, audit effort serves as a surrogate for audit quality). Furthermore, liability consequences in case of an inaccurate audit are explained. In a total of four (A, B, C and D) different remuneration scenarios (each with fixed and variable remuneration), the participants decided how much audit effort (in hours) they would invest in auditing the financial statement of the fictitious company for the respective fee. The study used a within-subject design experiment. Thus, all participants received all scenarios, so every participant had to make eight decisions.

Table 1: Remuneration scenario manipulation

Scenario A
A1: fixed remuneration: € 10,000
A2: fixed remuneration: € 9,000 + € 1,500 after 2 years
Scenario B
B1: fixed remuneration: €11,000
B2: fixed remuneration: € 9,500 + € 2,000 after 3 years
Scenario C
C1: fixed remuneration: € 20,000 [C1].
C2: fixed remuneration: €18,000 + €3,000 after 2 years
Scenario D
D1: fixed remuneration: €22,000

D2: fixed remuneration: € 19,000 + € 4,000 after 3 years

The scenarios themselves were designed as follows: The fixed fees were paid directly after the audit was conducted. In the case of variable audit fee contracts, a fixed portion is paid immediately and the variable part after two or three years, if there has been no complaint on the audit opinion. So the variable component is linked to the appropriateness of the audit opinion and NOT to issue a specific type of audit opinion (usually an unqualified audit opinion). In the scenarios with a variable audit fee component, a market interest rate of 5% and a "result-based" variable payment in three years is assumed. As described before, audit effort serves as a surrogate for audit quality. In addition to the information about remuneration contract (fixed or variable audit fees) the relation between audit effort and audit quality (derived from literature) is described, and liability consequences in case of an inaccurate audit are explained.

Students with relevant pre-knowledge are seen to be appropriate proxies for auditors (e.g. Ashton, 1980; Fatemi, 2012; Zimmermann, 2016). Additionally, the decisions in the experiment pertain basic considerations regarding the individually favoured remuneration system. Hence, the experiment was conducted with Master Students majoring in auditing or advanced financial accounting. In total, 97 students participated in the study, but due to missing data, four had to be excluded. For their participation in the experimental study (duration approx. 10-15 minutes) students were rewarded with 10 to 20 euros.

4. DATA ANALYSIS

The data gathered is analysed using both descriptive and statistical methods. Firstly, we present the descriptive details of the data collected. Next, we elaborate on the proofs regarding hypothesis H1. Subsequently, for the statistical analysis, a Wilcoxon Ranks Sum test is used to investigate the relationship of audit effort and type of fee (fixed or variable). The major findings are summarised and discussed at the end of the chapter.

4.1 DESCRIPTIVE STATISTICS

From the table below it is apparent that complete and valid information from 93 experiment participants was gathered. The percentage of male subjects in the sample is 54.84% (51) and that of women in 45.16% (42).

The table below shows that between 20 and 190 hours of auditing for the different scenarios are used. Mean and median are 72.25 resp. 70 hours, suggesting that there is no strong inclination of the collected data or no massive distortion by outliers.

Table 2: Descriptive statistics

		Audit effort	Audit effort / €	Fees / hour
N	Valid	741	744	744
	Missing	3	0	0
Mean		72.2530	0.0046934	239.2654

Median	70.0000	0.0045651	219.0584
Std. Deviation	26.94616	0.00156395	86.69709
Variance	726.096	0,000	7516.386
Minimum	20.00	0.00177	110.00
Maximum	190.00	0.00909	565.70

The values at audit effort per unit of money are analogous to observe. The standard deviation for all values is of approximately one-third. A look at the hourly rate shows that here the average € 239.26 relatively well above the median of € 219.05. Overall, hourly rates are used from € 110 to € 565.70.

As described above, every participant had to assess the scenarios A, B, C and D. The following graph shows that in all scenarios with a variable remuneration the audit effort is above the audit effort which was specified in the scenarios with fixed remuneration.

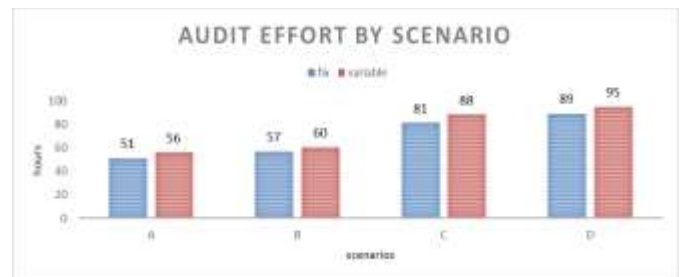


Figure 1: Comparison of average audit effort.

Hence, we show that on average more audit effort is invested in the scenarios with variable compensation components. As the graph above only includes the audit effort as a measure of audit quality, we have to conduct further analyses and take a closer look at the development of the relation of audit effort and audit fees. Therefore, the audit effort per unit of money and the hourly fee rate are calculated. The following formulas are used:

- (audit effort in hours)/(present value of audit fees) (1)
- (present value of audit fees)/(audit effort in hours) (2)

When analysing the full data set (including all eight decisions to be made by the study's participants), the following descriptive statistics and graphs were prepared.

The next graph shows the distribution of the audit effort, the audit effort per € and the € per hour audit effort.

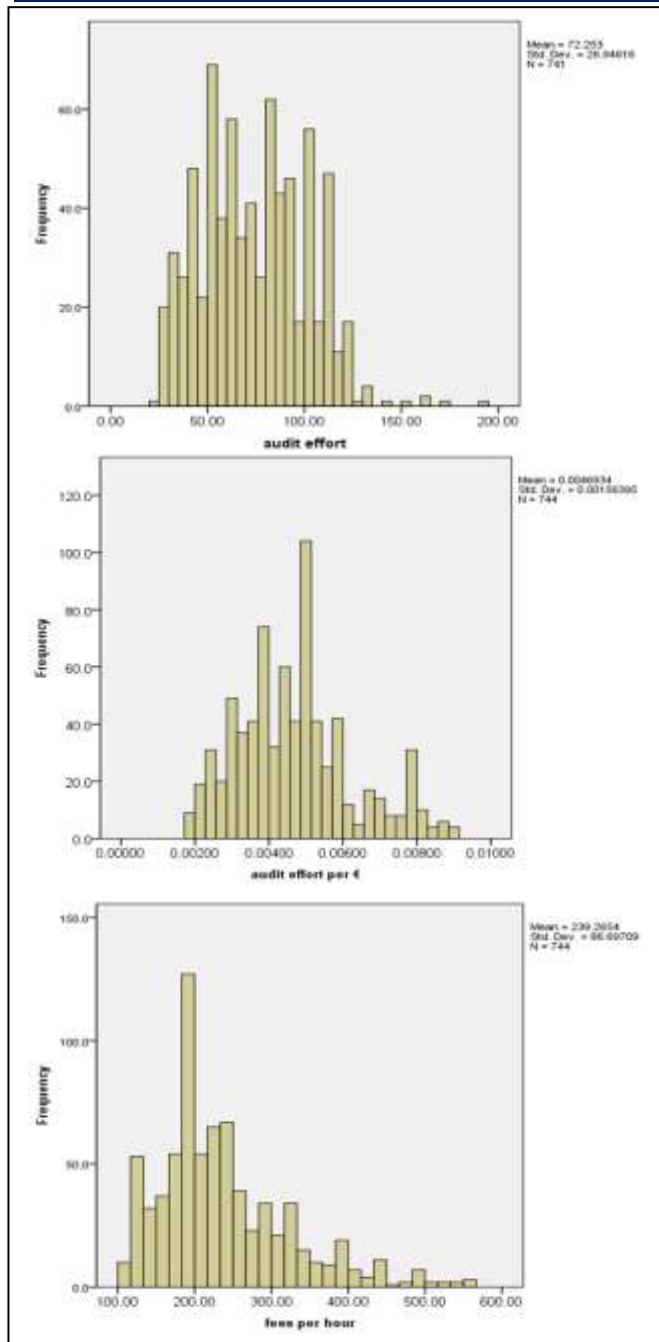


Figure 2: Audit effort, audit effort per Euro and fees per hour.

The more detailed distribution of audit effort, audit effort per unit of money and the hourly rate is shown in the next Figure.

Divided into fixed and variable fees one sees, that audit effort and audit effort per unit of money are higher for variable compensation. Conversely, the hourly rate for variable compensation is low. That means that the auditor in scenarios with variable compensation makes more audit effort or audit effort for his fee. From this, a first tendency to a higher audit quality due to variable remuneration can be

detected. Statistical analysis to prove this assumption can be found in section 4.3.

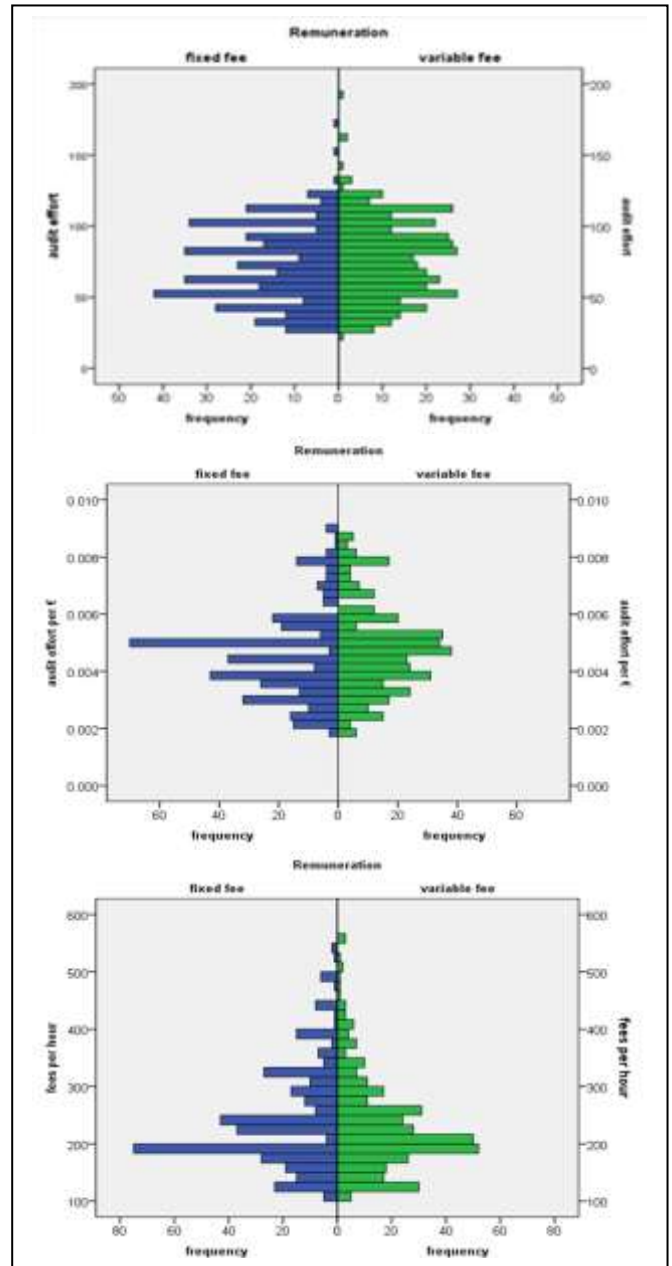


Figure 3: Distribution fixed and variable fees.

These data are analysed using a t-test for related samples. This test is performed and described in section 4.3. As a next step, the data regarding the first hypotheses – dealing with the perception of variable remuneration – is analysed..

4.2 Perception of variable remuneration (Hypothesis H1)

In the context of the remuneration system, the study participants were asked whether they classify a payment with variable components to be more attractive than a fixed payment.

Table 3: Attractiveness variable compensation

		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	Totally agree	50	53,8	53,8	53,8
	Neutral	35	37,6	37,6	91,4
	Totally disagree	8	8,6	8,6	100,0
	Total	93	100,0	100,0	

According to the preceding table, 50 of 93 people classify a remuneration system with variable remuneration as more attractive than one with fixed remuneration. This corresponds to a percentage of 53.8%. 37.6% of the study participants would opt for either of the two remuneration systems. Eight participants (8.6%) favour a fixed remuneration system. From this, it can be concluded that the majority prefers a remuneration system with variable component or at least that 91.4 % of the subjects do not find a fixed salary more attractive. Further questions were used to validate that result. Similar results are shown when asking for the attractiveness of a variable or fixed remuneration component. So the preferences seem to be stable, and most participants find variable remuneration components to be attractive.

In addition, the study participants were also asked which aspect has influenced them most in their decision in the scenarios with variable components of remuneration.

Table 4: Reasoning

		Frequency	Per cent	Cumulative Percent
Valid	Intrinsic motivation	38	40.9	40.9
	Remuneration	31	33.3	74.2
	Status and Responsibility	15	16.1	90.3
	Social Services	5	5.4	95.7
	Others	4	4.3	100.0
	Total	93	100.0	

While 40.9% referred to the increase in intrinsic motivation as their main decision reason, the higher net present value has influenced 33.3%. The increase in the present value is between 2.8 and 3.6% (average 3.23%). A higher net present value seems to be a valid driver for rational decision making of a “homo oeconomicus”. Strongly linked to hypothesis H2 and to point out the positive effect of the variable remuneration components, the audit effort increases stronger than the audit fee. The growth of audit effort lies – as depicted in the following figure – between 7.3% and 12.03%.

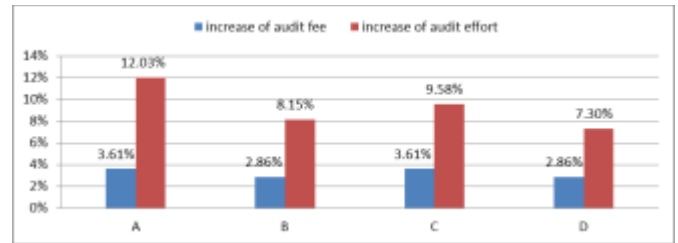


Figure 4: Increase of audit effort and audit fee.

This finding is strongly linked to hypotheses two and therefore, will be subject to further analyses in section 5.3.

Answering the questions indicates that variable remuneration is perceived in the context of the audit as very attractive by the study participants and that variable remuneration is linked to an additional incentive for the auditor. Also, the higher net present value is perceived as a special incentive in this form of compensation, but an above-average increase of audit effort as opposed to the fee increase (Figure 2) can be observed. The hypothesis H1 that remuneration systems with variable compensation component are classified as particularly attractive can be supported.

4.3 Effects of fixed fees and variable remuneration components (Hypothesis H2)

As a next step, the decisions of the study’s participants in light of fixed and variable fees are analysed. Within the research design, it was described that four scenarios (A, B, C and D) exist. Firstly, we describe the existing scenarios. Then, the participants were asked if they favour the scenarios with variable compensation components or not. Lastly, control questions regarding their assessment of the scenarios and the favourableness of variable or fixed remuneration components were asked.

For the statistical analysis, we use a Wilcoxon Signed Ranks test for related samples, as all scenarios were assessed by all participants (within-subject-design). In the course of a Wilcoxon Signed Rank test, the mean ranks of samples are compared and checked whether they differ significantly from each other. The analysis is performed in two steps, firstly an analysis regarding the ranks is conducted and then using a Wilcoxon Signed Ranks test (related samples) it is examined whether the average ranks significantly differ from each other. The descriptive statistic shows that in the scenarios with variable remuneration components, the audit effort is higher than in scenarios with fixed audit fees. This is in line with the results of the questions asked regarding the favourableness of variable or fixed remuneration.

Table 5: Comparison fixed and variable audit fees (by scenario)

Descriptive Statistics					
	N	Mean	Std. Deviation	Minimum	Maximum
Fixed fee A	93	50.31	18.459	0	90
Fixed fee B	93	56.48	20.029	0	100

Fixed fee C	93	80.06	22.979	0	130
Fixed fee D	93	89.15	24.553	40	170
Variable fee A	93	55.92	18.425	25	90
Variable fee B	93	60.49	19.505	20	100
Variable fee C	93	88.10	22.638	41	160

Ranks					
		N	Mean Rank	Sum of Ranks	
Variable fee A – fixed fee A	Negative Ranks	10 ^a	44.95	449.50	
	Positive Ranks	72 ^b	41.02	2953.50	
	Ties	11			
	Total	93			
Variable fee B – fixed fee B	Negative Ranks	18	48.22	868.00	
	Positive Ranks	68	42.25	2873.00	
	Ties	7			
	Total	93			
Variable fee C – fixed fee C	Negative Ranks	5	34.70	173.50	
	Positive Ranks	75	40.89	3066.50	
	Ties	13			
	Total	93			
Variable fee D – fixed fee D	Negative Ranks	10	48.45	484.50	
	Positive Ranks	70	39.36	2755.50	
	Ties	13			
	Total	93			

Test Statistics ^a		
	Variable fee A – fixed fee A	Variable fee B – fixed fee B
Z	-5.825 ^b	-4.334 ^b
Asymp. Sig. (2-tailed)	.000	.000
	Variable fee C – fixed fee C	Variable fee D – fixed fee D
Z	-6.982 ^b	-5.474 ^b
Asymp. Sig. (2-tailed)	.000	.000

^a Wilcoxon Signed Ranks Test ^b Based on negative ranks.

The correlations table for the paired samples shows a high correlation which is highly significant. That means there is a relation between the two assessments of audit effort. This is quite logical, as the same case was assessed, and only one addition information (= the variable remuneration component) was added. Besides, the t-test also indicates a highly significant difference between the audit effort in situations with fixed fees and variable remuneration components. The differences between the audit effort in scenarios with fixed fees and variable fees are statistically significant, and therefore do not occur randomly. Hence, variable remuneration components might lead to a higher audit effort.

As described above to depict the relation of effort and costs the audit effort, the effort per €, and the fees per hour for the full sample are subject to analysis.

Firstly the descriptive statistics show the means, a number of observations as well as the standard deviation and the standard error. The values are quite similar, so as in the full sample, no extreme skewness can be identified. Secondly, the paired samples correlations show a high correlation (from .718 to .765) which is statistically significant. So again, the audit effort for the scenarios with fixed fees and variable components are strongly related to each other.

Table 6: Comparison fixed and variable audit fees (overall)

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Audit effort (fix)	69,6314	369	26,25056	1,36655
	Audit effort (variable)	74,9770	369	27,40671	1,42674
Pair 2	Audit effort / € (fix)	0,0046	372	0,00155	0,00008
	Audit effort / € (variable)	0,0048	372	0,00157	0,00008
Pair 3	Fees per hour (fix)	245,0480	372	88,27549	4,57687
	Fees per hour (variable)	233,4824	372	84,81361	4,39738

Paired Samples Correlations					
		N	Correlation	Sig	
Pair 1	Audit effort (fix) & audit effort (variable)	369	0,751	0,000	
Pair 2	Audit effort per € (fix) & audit effort per € (variable)	372	0,718	0,000	
Pair 3	Fees per hour (fix) & fees per hour (variable)	372	0,765	0,000	

Paired Samples Test							
		Paired Differences			t	df	Sig
		Mean	Std. Deviation	Std. Error Mean			
Pair 1	Audit effort (fix) - audit effort (variable)	-5,34553	18,95799	0,98691	-5,416	368	0,000
Pair 2	Audit effort / € (fix) - audit effort / € (variable)	-0,00021	0,00117	0,00006	-3,426	371	0,001
Pair 3	Fees / hour (fix) - fees / hour (variable)	11,56556	59,46381	3,08306	3,751	371	0,000

The test statistics show that the audit effort, the audit effort per monetary unit (€) and the hourly rate are significantly different between fixed and variable remuneration. Due to the previous descriptive presentation of data, it is shown that significantly more audit effort and more audit effort per unit of money is used in variable compensation. However, the hourly rate is lower in a variable remuneration system than in a fixed remuneration. The reduced hourly rate, as well as the higher audit effort and audit effort per unit of money, suggest that the audit quality in the presence of variable remuneration components is higher. Thus, these statistical tests show that a remuneration of the auditor that includes variable components, enhance higher audit quality. The investigation thus shows that hypothesis H2, according to which variable remuneration components can have a positive effect on audit quality can be supported.

As mentioned above, in the scenarios with a variable audit fee component, a market interest rate of 5% and a "result-based" variable payment in three years is assumed. The "result" is if the audit opinion sustains and therefore, was set accurately or not. The analysis of the questions about the variable remuneration showed that the higher net present value was a key factor in the decision in favour of variable compensation. Therefore the statistical analysis also investigates whether audit fees and audit usage have developed significantly differently.

Lastly, a t-test for paired samples was conducted. For the analysis, the increase of audit effort and audit fee is computed as a relation of audit effort or the given audit fees in the scenario with fixed fees and the audit effort or the given audit fees in a scenario with variable remuneration components. Hence, four observations per participant can be made.

The descriptive statistic shows a mean growth of the audit effort of 9.28 %, whereas the mean audit fee increased by 3.5 %. The correlation analysis shows a very weak and insignificant correlation.

Table 7: Increase of audit effort and audit fee

Paired Samples Statistics							
		Mean	N	Std. Deviation	Std. Error Mean		
Pair 1	Increase of audit effort	1,0928	372	0,15292	0,00793		
	Increase of audit fee	1,0350	372	0,00501	0,00026		
Paired Samples Correlations							
		N	Correlation	Sig			
Pair 1	Increase of audit effort & increase of audit fee	372	0,100	0,054			
Paired Samples Test							
Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	t	df	Sig.

Pair 1	Increase of audit effort - increase of audit fee	0,05782	0,15250	0,00791	7,313	371	0,000
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As a result of the t-test, it can be observed that the audit effort increases significantly more than the audit fees. This indicates that the variable remuneration component leads to a significantly higher audit effort and therefore, to higher audit quality. Besides, this result shows that the increase of audit effort is not solely driven by the increase of the net present value of the audit fees, but the growth of audit effort exceeds the fee growth. Hence, a higher net present value functions as a driver of a higher audit effort, but the effect is significantly smaller than from the variable remuneration component. Thus, our paper shows a positive effect of variable remuneration components. It should be noted that "variable" should not be understood as "result dependent" in the sense of granting a specific audit opinion, but that the "Hold" and "Confirm" of the opinion will be used as the relevant measure.

Overall the analyses show that both hypotheses can be supported based on the data collected. The results tend to be robust in terms of varying questions regarding the attractiveness of variable remuneration components, different views on the audit effort and rival drivers of decision making. In the context of auditing, variable remuneration is considered as attractive. Also, the audit effort and the audit effort per unit of money can be significantly increased through a variable remuneration.

5. CONCLUSION

The topic of an audit fee, including variable components, was discussed in the course of this article. According to § 270 UGB (Unternehmensgesetzbuch (Austrian commercial law)) performance audit fees are prohibited. Nonetheless, one has to ask how such long-term variable remuneration components have an impact on the audit effort and thus, respectively on audit quality. In addition to § 270 UGB also the question of the definition of performance-related or variable has to be discussed – in our understanding in the context of the auditing performance-related or variable should be seen in connection to the reliability and accuracy of the audit opinion (i.e. the audit report).

Based on the research it can be seen that audit fee contracts with variable components seems to be attractive, and also suitable to increase the audit effort per unit of money or reduce the necessary monetary units per audit effort. This indicates the potential to increase audit quality significantly. The analyses show that a variable component of the auditor's remuneration is (1) assessed to be attractive, and (2) has the potential to increase audit quality significantly.

Of course, all limitations, which are relevant to economics experiments, are inherent in this paper. Also, the study was conducted with students, although previous work, such as

Graschitz (2017), Utami and Nahartyo (2017) as well as Ashton and Kramer (1980) have shown that students certainly make similar decisions as auditors. Nevertheless, further evaluation, as well as a discussion of the facts and the results with practitioners, makes sense and could support the outcomes of this study.

Regarding the variable component, it has to be mentioned that the reliability and accuracy of the audit opinion (audit opinion in all its forms) are understood as a trigger event for the payment of the variable part of the fee in the context of this article. Within the scenarios, A, B, C and D a time horizon of about three years was used as a representation of the connection to long-term accuracy of judgment made by the auditor. Practically such a system could be implemented by using state or bank supervised trust accounts. From an enterprise perspective, this would lead to immediate pay-out of the present value of the variable part on a trust account with a fixed interest rate. In the case of the correctness and reliability of the audit opinion, the variable compensation component of the auditor or the audit firm would then be transferred after the expiry of the specified period. For the auditor, this would bring an additional incentive for a higher audit quality as no loss could be expected, e.g. if the company audited no longer exists. For the investors a – compared to the higher investment – significantly higher reliability and a deposit in case of audit failure can be caused by such a system including variable remuneration components..

6. REFERENCES

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