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Strategic Decision Behavior and Audit Quality of Big and Small Audit Firms in a Tendering Process[*]

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Abstract

We investigate the strategic decision making of audit firms in a tendering process. In particular, we are interested in how audit firms behave to acquire audit clients and which audit quality is ensured. Our main findings are manifold. First, if two big audit firms are competing, we do not observe that each firm tries to acquire all clients. However, if one big and one small audit firm are competing, we find evidence that the big audit firm generally apply strategies to acquire all available clients. In contrast, the small audit firm uses a clear "Guerilla Strategy" which means that the firm concentrates only on few clients whereas the other clients are almost ignored. Second, small audit firms are better off if more clients do exist in the tendering process. Thus, the legislator should ensure that more audit clients are tendered if the competitiveness of smaller audit firms should be enhanced. Third, in a situation in which the competitive advantage of big audit firms increases over-proportionally, we do not observe that big audit firms are able to decrease the market share of small audit firms markedly or are even able to push small audit firms out of the market. Fourth, we find that the quality level of an audit is higher if the client is acquired by a small audit firm. This implies that increasing the number of smaller audit firms could increase the quality level of the audit market.

Keywords

tendering process, behavioral accounting, experimental economics

JEL-Classification

M42, C91

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1 Introduction

In 2010, the European Commission releases a green book on the audit policy. One of the main goals is to increase the competition on the audit market. In particular, smaller audit firms should be more considered in the audit process and their market share should increase. As the audit process starts with the tendering of an audit mandate, we investigate this tendering process in more detail. Our contribution to the literature is that we provide a comprehensive analysis of the strategic decision making of audit firms. So far, there is no study which examines the strategical behavior in a tendering process explicitly. Our main research questions are as follows: Which strategies do audit firms use to acquire audit clients? Do big and small audit firms differ with respect to their strategical behavior? Are big audit firms able to decrease the market share of small audit firms markedly or are they even able to push them out of the market in the long run? How can the legislator improve the competitiveness level of small audit firm? Does the audit quality depend on whether a big or small audit firm acquires an audit client?

A competition between audit firms emerges if an auditee decides to tender. In accordance with Beattie and Fearnley (1998a), this tendering process can be characterized in five steps. First of all, the auditee has the initial idea. Second, a request for bids is sent to possible audit firms. Hereafter, a brief meeting with the CFO and (possibly) a company visit take place before the potential auditors present their offers to the audit committee or the full board of the company in the third step (Beattie and Fearnley, 1998b). After the presentations, the client has to evaluate the offers (fourth step) and has to decide which audit firm is chosen in the last step.

Initiated by the seminal paper of DeAngelo (1981a), audit fees are the most important aspect for choosing an audit firm in the audit literature. However, recent studies suggest that audit quality and audit service have a greater impact on the auditee's decision since audit fees are generally on a low level and are very similar across audit firms. For example, Johnstone et al. (2004) show that increasing audit services is more important than decreasing audit fees and argue that auditees focus on quality instead on fees. In particular, they show that competition for audit clients leads to an increase of planned audit hours of 34% while the audit fees only decrease by 13%. Beattie and Fearnley (1998b) find that two-thirds of the auditees have other reasons than the level of audit fee when they decide on their auditors. They argue that the bids are within the acceptable range or are very similar. Consequently, the audit quality has

become a very important aspect in the tendering process. In line with these findings, we will use the offered audit quality as the criterion that determines which audit firm is chosen by the audit client to analyze strategic decision making in our study.

Unfortunately, detailed information on the bidding behavior and the offers made by different audit firms to acquire an audit mandate in a tendering process are not disclosed. As archival data is therefore not feasible, we decided to conduct a laboratory experiment to analyze our research questions. Furthermore, this research method allows us to clearly identify cause and effect relationships because we are able to vary the tendering situation (e.g., varying the competitiveness level of audit firms or varying the number of audit clients) while keeping the other economic aspects constant (what otherwise would bias our analysis). This grants a high level of internal validity. As firms' responses are not examined in their natural environment, the level of external validity is lower with this kind of research method. However, since an environment in which situations *only* differ with respect to the level of competitiveness or the number of audit clients cannot be achieved in reality, such an environment has to be created if these different situations should be analyzed. As a consequence, we believe that conducting a laboratory experiment is an appropriate method to answer our research questions.

In our experiment, we analyze the strategical behavior of audit firms in a tendering process. In particular, we are interested in how audit firms behave to acquire audit clients and which audit quality is ensured. We examine different situations and vary the number of audit mandates and the competitiveness level of the audit firms. The latter variation enables us to analyze decision behavior on audit markets with two big audit firms or with one big and one small audit firm. Our experimental design is based on the Colonel Blotto Game in which originally two players with battalions fight against each other for different battlefields (see section 2.3 for more details). We apply this game theoretical approach to model an audit context in which two audit firms compete for audit clients in a tendering process. The main reasons for our design decision are that this game is very simple and thus can be easily transferred in the lab. Furthermore, and more important, this approach reflects the tendering process observed on audit markets appropriately. As we are not interested in how subjects solve complex case studies where an expertise is crucial, we decided to use students as subjects to analyze strategical behavior. This is in line with, for example, Dopuch et al. (2001) and Church and Zhang (2011) who simulates strategic decisions in an audit context with students. To put the students in the position of an audit firm's manager, we use a framed context with loaded instructions.

Our main findings are manifold. First, if two big audit firms are competing, we do not observe that each firm tries to acquire all clients. However, if one big and one small audit firm are competing, we find evidence that the big audit firm generally apply strategies to acquire all available clients. In contrast, the small audit firm uses a clear "Guerilla Strategy" which means that the firm concentrates only on few clients whereas the other clients are almost ignored. Second, whereas the clients are shared equally in case of two big audit firms, the big audit firm is better off and acquires significantly more clients in case of one big and one small audit firm. Third, small audit firms are better off if more clients do exist in the tendering process. As a consequence for real markets, if the competitiveness of smaller audit firms should be enhanced, the legislator should ensure that more audit clients are tendered. Fourth, in a situation in which the competitive advantage of big audit firms increases over-proportionally, we do not observe that big audit firms are able to decrease the market share of small audit firms markedly or are even able to push small audit firms out of the market. Fifth, we find that the quality level of an audit is higher if the client is acquired by a small audit firm. This finding is in contrast to DeAngelo (1981b) who argues that larger audit firms will offer a higher audit quality. For real markets, this implies that increasing the number of smaller audit firms could increase the quality level of the audit market.

The remainder of the paper is organized as follows. In section 2, we discuss the experimental design, explain our sample and experimental protocol, give a short overview about the Colonel Blotto Game, present the results of our *first* experiment and conduct a robustness check. In the following section 3, we describe the experimental design of our *second* experiment and show the results. A summary is presented in section 4.

2 Experiment 1

2.1 Experimental Design

Our experiment – which is based on the Colonel Blotto Game (see section 2.3) – is framed as a decision of an audit firm manager.[1] Each participant is a manager of a single audit firm. The task of each manager is to acquire audit clients in a tendering process. In our experiment, the audit market consists of two audit firms. Therefore, two participants are assigned to one group who compete for the available clients. The experiment consists of 15 periods and the group

[1] Instructions are presented in appendix A1.3.

allocation remains constant over all periods. This means that a participant is always confronted with the same counterpart.

As motivated in the introduction, we use the audit quality as the only criterion that determines which audit firm acquires a client. As common in the literature, we use the effort, which an audit firm spends on the audit, as a proxy for audit quality. In our experiment, the effort is framed as the number of audit hours. Spending more hours implies higher audit effort which results in a higher audit quality. With respect to real audit markets, the number of audit hours can also be seen as the number of auditing staff (including different positions like junior or senior managers). At the beginning of each period, each participant is endowed with a fixed amount of hours which is common knowledge for both group members. We assume that the price for an audit is constant. Therefore, a client pays always the same compensation for an audit independent of the audit quality and which audit firm conducts the audit. We do not distinguish between the clients who can be acquired. This implies that one client is of equal value as another client for an audit firm.

Which of the two audit firms acquires a client is decided in a (first-price sealed-bid) auction dependent on the number of hours. Audit firms bid simultaneously and the bid of one audit firm is unknown by the other. There is one negotiation for each client. This implies that for each client it is decided separately which audit firm acquires the respective client. However, all negotiations are conducted simultaneously. Therefore, audit firms are informed about the outcome of each negotiation after all decisions are made. Figure 1 presents one exemplary screenshot of the negotiation stage and figure 2 one of the outcome stage.

The audit firm who has bid the highest audit quality (in hours) acquires the client and has to spend the promised effort (i.e., no ex post modification is possible). A subject is not allowed to allocate more or less than her endowment of hours. If more or less hours are allocated to the available clients in one period, an error message appears and the subject is asked to adjust her allocation accordingly. For each acquired client, the audit firm gains 100 lab-points (where 100 lab-points exactly correspond to 5 Euro). Therefore, each participant's total payment of one period is determined by the number of acquired clients in this period. As we are only interested in the negotiation behavior of the audit firms, the clients are computerized (i.e., no human market players) and no real audit is conducted by a participant. Therefore, the only task of each participant is to acquire clients in the tendering process. In each period, the participants are confronted with completely the same decision problem.

[Figure 1]

[Figure 2]

In our first experiment, we use a 2x2 between-subject design in which we vary the number of clients and the number of audit hours assigned to each audit firm. Within one out of our four treatments, the number of clients or the number of hours is not varied. The number of clients is either four in the *4-Clients-Treatment* or eight in the *8-Clients-Treatment*. In the *1000-1000-Treatment*, the first and the second audit firm are each endowed with 1000 hours at the beginning of each period. This symmetric case reflects an audit market with two big audit firms. In the *1000-600-Treatment*, the first audit firm is endowed with 1000 hours, but the second with 600 hours only. This asymmetric case mirrors an audit market consisting of one big and one small audit firm. A participant is randomly assigned to one treatment only. Table 1 gives an overview on our four (between-subject design) treatments including the number of participants per treatment. For reasons of simplification, we call the first audit firm *Type-1-Audit-Firm* and the second audit firm *Type-2-Audit-Firm* in the following. Whereas the Type-1-Audit-Firm is always endowed with 1000 hours, the Type-2-Audit-Firm is endowed with either 1000 hours (1000-1000-Treatment) or 600 hours (1000-600-Treatment).

[Table 1]

If both audit firms allocated the same amount of hours to one client, we apply the following two decision rules which are commonly used in the Colonel Blotto Game literature for this situation. In the symmetric case (1000-1000-Treatments), a (computerized) random draw (with an equal probability) decides which audit firm is awarded the contract. In the asymmetric case (1000-600-Treatments), the big audit firm wins the client. With respect to real audit markets, the last decision rule can be, for example, explained by a higher level of reputation and experience of big audit firms.

2.2 Sample and Experimental Protocol

Before the actual experiment was executed, we measured subject's risk attitude with the Holt-Laury-Task.[2] We use the total number of low risk lottery choices (i.e., lottery A) as our measure for subject's risk aversion which is measured on an 11-point Likert scale (where 0 = very risk seeking and 10 = very risk averse). The participant's payments from this task and from the actual experiment are incentive based. After the entire experiment was completed,

[2] See Holt and Laury (2002). Instructions are presented in appendix A1.2.

the payoff from the Holt-Laury-Task is determined in accordance with the procedure described in the instructions.

To avoid income effects and strategies to hedge the risk across all periods, only one out of the 15 periods determines pay of the actual experiment. To determine this payoff, the computer decides randomly which of the 15 periods is relevant for the participant's payment at the end of the experiment. Dependent on the acquired clients in this selected period, the participant's payoff was calculated and converted into Euro. The resulting total payment from the actual experiment and from the Holt-Laury-Task is then paid out in cash immediately.

At the beginning of each experiment the individuals are granted with two training periods which are not relevant for the final payment. After each period, each participant is informed (for each client separately) whether she or the other group member has acquired this client. Furthermore, we displayed the hours the participant has assigned to each client. However, the information how many hours the other group member has chosen is not provided to her.

The experiment was conducted at the computerized experimental laboratory of the Leibniz University Hannover (LLEW) in 2014 and 2015. In total, 136 subjects (70 females and 66 males) participated and earned on average 19.20 Euros in approximately 90 minutes (approximately 12.80 Euros per hour).[3] Participants were paid in cash immediately after the experiment. A show-up fee was not paid. Table 2 provides an overview of the main characteristics of our participants. The experimental software was programmed with z-Tree (Fischbacher, 2007) and the participants were recruited with the software hroot (Bock et al., 2014).

[Table 2]

2.3 Colonel Blotto Game

The Colonel Blotto (CB) Game is first described in a game theory essay by Borel (1921) and is named by Gross and Wagner (1950). In this game, a fictional Colonel Blotto is confronted with the following military situation.[4] Two combatants A and B fight for *n* battlefields. A battlefield i ($i = 1,...,n$) is won by the player who send more troops to it. Each combatant is endowed with a battalion (X^A, X^B) where the battalion's strength (e.g. number of soldiers, etc.) can vary between both players (i.e., $X^A = X^B$ or $X^A \neq X^B$). The information about the

[3] The subjects and corresponding values from the two robustness check treatments presented in section 2.5 are not included.

[4] See, for example, Myerson 1993, Roberson 2006, and Homburg 2011.

battalion's strength of each player is common knowledge. The task of the combatants is to allocate their entire battalions to the n battlefields (i.e., $X^A = x_1^A + ... + x_n^A$ and $X^B = x_1^B + ... + x_n^B$) to win as many battlefields as possible.

In the literature, different solutions for the CB Game are presented (see, for example, Borel and Ville, 1938, and Gross and Wagner, 1950). However, we will only refer to the studies of Myerson (1993), Roberson (2006), and Hart (2008) in the following since these are the most important studies and closest to our own paper. Myerson (1993) considers a CB Game with an infinite number of battlefields, with symmetric resources of both players (i.e., $X^A = X^B$), and in which the battalions are arbitrarily divisible.[5] He figures out that there exists only an equilibrium with mixed strategies. In particular, the two competing players assign battalions on the interval $[0, 2a]$ to each battlefield where $a = X^A/n$. This implies that each player should not send more than twice as much as the average numbers of troops to one specific battlefield. With respect to our first experiment, participants should therefore make a bid for each audit client in-between 0 and 500 in the 4-Clients-Treatment and in-between 0 and 250 in the 8-Clients-Treatment.

Roberson (2006) relaxes the assumptions of Myerson (1993) and considers a finite number of battlefields. However, he has to make a further assumption for the case when both players send the same number of troops to one battlefield. In this case, the stronger player A always gains the specific battlefield. For symmetric resources, Roberson is able to replicate the finding of Myerson and show that each player should distribute the troops on the interval $[0, 2a]$. For the asymmetric case with $X^A > X^B$,[6] the solution changes a little bit. Whereas player A uses the same strategy as before, player B will now choose one or more battlefields randomly to which he will not send troops (since he is aware of the stronger player A). But on the remaining battlefields, he distributes his resources on the mentioned interval. So, on these battlefields, the weaker player B fights with his full strength. In the following, we will refer to this strategy as a "Guerilla Strategy" which implies that the player concentrates only on some battlefields (in our case: audit clients) whereas the others are completely ignored.

While the above mentioned solutions only cover real numbers resources, Hart (2008) discusses solutions for the allocation of integer battalions to the battlefields. He figures out

[5] In his paper, he uses the CB Game to model a two-party election campaign.

[6] Roberson (2006) analyzes this asymmetric case under the assumption that the following condition is fulfilled: $2/n \cdot X_A \leq X_B$. This implies that the battalion's strength of player B is not too weak compared to player A.

that the problem becomes much more complicated in this case, but he is able to show that the players should still stay in the mentioned interval $[0, 2a]$.

There are already some experimental investigations of the CB game. Most of them support the theoretical predictions. For example, Chowdhury et al. (2013) find evidence that the stronger players try to win all battlefields. In contrast, subjects use a "Guerilla Strategy" if they are in the position of the weaker player. Avrahami and Kareev (2009) also observe that the weaker player will give up enough battlefields to compete on the other battlefields with the stronger player. Modzelweski et al. (2009) use five battlefields and observe that many subjects play a "High-Stakes-on-3-Battlefields" strategy. This strategy implies that subjects send no or only very few troops to two battlefields, but a high amount of troops is sent to each of the three remaining battlefield. Interestingly, Chowdhury et al. (2013) find that if the participants are regrouped, they often allocate exactly the same amount of troops to a battlefield. These "hot box" strategy diminishes when the subjects play against the same opponent. Although some experimental research is done, the CB Game is never conducted in a framed context with loaded instructions. Moreover, this game theoretical approach is not applied for an audit context so far.

2.4 Results

In our analysis, we focus on three dependent variables: 1) the number of clients the Type-1-Audit-Firm has acquired, 2) the quality level per acquired client, and 3) the different bidding strategies.[7] With respect to the first variable, table 3 presents the descriptive statistics for the number of clients the Type-1-Audit-Firm has acquired in each treatment over all periods. Figure 3 displays the number of clients on average for each period and treatment. As expected, we observe that both types of audit firms share the clients equally in the 1000-1000-Treatment irrespective of whether four or eight clients are obtainable. In this case, we do not find any significant differences ($p = 0.43$ for the 4-Clients-Treatment, $p = 0.15$ for the 8-Clients-Treatment, Wilcoxon signed-rank test, two-tailed). In the 1000-600-Treatment, we find that the Type-1-Audit-Firm acquires more clients than the Type-2-Audit-Firm. The Type-1-Audit-Firm gains 2.92 clients in the 4-Clients-Treatment and 5.52 clients in the 8-Clients-Treatment on average. The differences between both types are highly significant ($p < 0.001$

[7] Our results are in line with the theoretical prediction of the Colonel Blotto Game that each subject makes a bid in-between 0 and 500 in the 4-Clients-Treatment and in-between 0 and 250 in the 8-Clients-Treatment. Over all treatments, we observe a very high level of theory conformity. In particular, we find theory conformity in more than 98% of our cases. Since we do not observe significant differences between the treatments in this regard, we abstain from reporting these results in more detail.

for the 4-Clients-Treatment, $p < 0.001$ for the 8-Clients-Treatment, Wilcoxon signed-rank test, two-tailed). With respect to the decision pattern over time (see figure 3), we do not find any unexpected or discontinuous behavior. In contrast, the number of clients the Type-1-Audit-Firm has acquired remains almost stable over time.

With respect to the differences between the 4- and 8-Clients-Treatment, we observe (as expected) that the Type-1-Audit-Firm acquires approximately twice as much clients in the latter than in the first case ($3.90 \approx 3.92 = 2 \cdot 1.96$) in the 1000-1000-Treatment. However in the 1000-600-Treatment, we find that the number of acquired clients in the 8-Clients-Treatment is significantly lower than twice this value in the 4-Clients-Treatment ($5.52 < 5.84 = 2 \cdot 2.92$) although twice as much clients are obtainable ($p < 0.001$, Wilcoxon signed-rank test, two-tailed). This implies that the Type-2-Audit-Firm (with the lower endowment of 600) is able to acquire more clients relatively and therefore is better off if more clients do exist in the tendering process. As a consequence for real markets, if the competitiveness of smaller audit firms should be enhanced, the legislator should ensure that more audit clients are tendered.

[Table 3]

[Figure 3]

In table 4, we present the mean quality level (in hours) per acquired client in each treatment and over all periods. Since both types of audit firms face the same endowment of 1,000 hours in the 1000-1000-Treatment and therefore are confronted with absolute the same decision problem, we do not differentiate between both types in this case. Irrespective of whether we look at the 1000-1000 or 1000-600 scenario, we observe (as expected due to our design) that the quality level when four clients are obtainable is approximately twice as high as the level with eight clients. For example, the mean quality level is 354.2 with four clients and 176.1 with eight clients in the 1000-1000-Treatment. All differences are highly significant ($p < 0.001$ for all "four vs. eight clients" comparisons, Mann-Whitney U test, two-tailed). More surprisingly, in the 1000-600-Treatment, we find that Type-2-Audit-Firms provide a significantly higher quality level per acquired client than Type-1-Audit-Firms independent of whether four or eight clients are obtainable ($p < 0.001$ for both the 4- or 8-Clients-Treatment, Mann-Whitney U test, two-tailed). For instance, the mean quality level is 311.4 of the Type-2-Audit-Firms whereas the Typ-1-Audit-Firms only provide a quality level of 269.2 on average per acquired client in the 4-Clients-Treatment. Therefore, the quality level of an audit

is higher if the client is acquired by a small audit firm. For real markets, this implies that increasing the number of smaller audit firms could increase the quality level of the audit market as well.

[Table 4]

To confirm these descriptive results, we run linear regressions for our asymmetric 1000-600-Treatments. Since subjects face repeated decision situations, we run linear regression models with random effects, where the period number is the time variable and the subject's identity number is the cross-sectional variable. In model 1, the dependent variable is the number of acquired clients in a period. In model 2, we use the mean quality level (in hours) per acquired client in a period as dependent variable.[8] The results of both models are displayed in table 5 (regression coefficients, robust standard errors in parentheses clustered at the subject level). In both models, we regress on two dummy variables. The dummy "Type-2-Audit-Firm" takes the value 1 if a subject acts as a manager of a Type-2-Audit-Firm and 0 in case of a Type-1-Audit-Firm. The dummy "8-Clients-Treatment" takes the value 1 if a subject participated in the 8-Clients-Treatment and 0 if a subject was assigned to the 4-Clients-Treatment. As controls we use the number of periods ("period") to control for time effects, "age", "gender" (female = 0, male = 1), "economics major" (1 if subject studies economics or management, 0 otherwise), "bachelor's degree" (1 if subject studies in a bachelor's degree program, 0 otherwise), "number of semesters studied", "risk aversion" denotes the total number of low risk lottery choices in the Holt-Laury-Task (i.e., lottery A) and is our measure for subject's risk aversion (measured on an 11-point Likert scale where 0 = very risk seeking and 10 = very risk averse), "income" is the monthly income after fixed cost (in Euro).

Our previous findings observed in the asymmetric 1000-600-Treatments are confirmed by both regression analyses. In particular, we observe that Type-2-Audit-Firms significantly acquire less audit clients than Type-1-Audit-Firms (see model 1). However, the audit quality is significantly higher if an audit client is acquired by a Type-2-Audit-Firm (see model 2). Not surprisingly, it turns out that subjects significantly acquire more clients in the 8-Clients-Treatment (model 1) and that the mean quality level per acquired client decreases if eight instead of four clients are available (model 2). In both models, the variable period has no significant influence which indicates that our results are stable over time. With respect to the

[8] In each case in which a subject is not able to acquire a client in one period, the dependent variable mean quality level (in hours) per acquired client is not defined (i.e., missing value). That's why the number of observations is lower in model 2 than in model 1.

demographic variables, we observe that age and economics major (bachelor's degree) have a positive and significant influence on the number of acquired clients (mean quality level per acquired client). However, even if we control for these demographic characteristics, our previous findings are supported.

[Table 5]

To analyze the acquisition strategies of the two types of audit firms in the tendering process, we define different strategies dependent on the chosen quantity levels. Each allocation (i.e., chosen hours per client in a period) is assigned to one of these strategies. Since we assume that subjects need some periods to familiarize with the decision problem, we only categorize the decisions made in the last five periods. In each of these periods, we use each allocation of an audit firm for our categorization. In the 4-Clients-Treatment, we distinguish four strategies. The "High-Stakes-On-4-Clients" strategy implies that an audit firm put a high stake of the available hours on every client. For example, if an audit firm shares the available hours equally across all clients (i.e., 250-250-250-250), we will define that this audit firm pursues a "High-Stakes-On-4-Clients" strategy. However, other combinations in which a high stake of hours is allocated on all clients (like 250-250-300-200 or 200-200-300-300, for example) are assigned to this strategy as well. The "High-Stakes-On-3-Clients" strategy mirrors allocations where a large share of the available hours is allocated on three clients and nothing or only some hours are allocated on the fourth client (for example, 300-300-400-0 or 310-300-330-60). The "High-Stakes-On-2-Clients" and the "High-Stake-On-1-Client" strategy are defined accordingly. In appendix A2, tables A1 to A3 give a detailed overview on the observed allocations and the corresponding strategy assignments. The same procedure is applied in the 8-Clients-Treatment. However, eight different strategies are defined. In tables A4 to A6 in appendix A3, the different allocations and assignments are presented for this treatment.

With respect to the 4-Clients-Treatment, table 6 presents the distribution of revealed strategies. The mean number of acquired clients resulting from a strategy is displayed in brackets. Since both types of audit firms face the same endowment of 1,000 hours in the 1000-1000-Treatment, we do not differentiate between both types again. In this case, the "High-Stakes-On-2-Clients" and "High-Stakes-On-3-Clients" are the most chosen strategies (approximately 75% of all allocations). Interestingly, the "High-Stakes-On-4-Clients" strategy is only chosen in 22.7% of the cases. However, the mean number of acquired clients is almost the same for all three strategies (approximately 2 clients). In the asymmetric 1000-600 case, most of the Type-1-Audit-Firms (62.0%) apply a "High-Stakes-On-4-Clients" strategy. The

"High-Stakes-On-3-Clients" strategy is only chosen in 36.0% of the cases, but results in the same number of acquired clients (approximately 2.7 clients). With respect to the Type-2-Audit-Firms, we observe that 88.0% of all allocations are assigned to the "High-Stakes-On-2-Clients" strategy and we find that this strategy leads to the highest number of acquired clients (1.41). To summarize: If two big audit firms are competing (1000-1000-Treatment), we do not observe that they invest high stakes on each client. Instead, "High-Stakes-On-2-Clients" and "High-Stakes-On-3-Clients" strategies are predominantly. In contrast, if one big and one small audit firm are competing (1000-600-Treatment), the big audit firm tries to acquire all clients generally by applying a "High-Stakes-On-4-Clients" strategy. The small audit firm uses a clear "Guerilla Strategy" which means that the firm concentrates only on two clients whereas the other two clients are completely ignored.

[Table 6]

Table 7 presents the corresponding analysis for the 8-Clients-Treatment. In the symmetric 1000-1000 case, the audit firms mainly choose a "High-Stakes-On-5-Clients" with a mean number of acquired clients of 4.05. Although other strategies are chosen less often, they are similar effectively. For example, the "High-Stakes-On-4-Clients" ("High-Stakes-On-7-Clients") strategy leads to a mean of 4.17 (4.40).). In the asymmetric 1000-600 case, there is no predominant strategy of the Type-1-Audit-Firms. Instead, many different strategies are applied. With respect to the Type-2-Audit-Firms, we observe that over 90% use a "High-Stakes-On-3-Clients" (56.4%) or "High-Stakes-On-4-Clients" (34.6%) strategy resulting in a mean number of acquired clients of approximately 2.6. To summarize: The behavior in the symmetric case is very similar to the behavior revealed in the 1000-1000-Treatment with 4 clients. In both environments, the audit firms do not invest high stakes on each client. In the asymmetric case, the big audit firms apply many different strategies. This is in contrast to the 4-Clients-Treatment where a clear "High-Stakes-On-All-Clients" strategy was revealed. The small audit firms again use a clear "Guerilla Strategy" which means that each firm concentrates only on three or four clients whereas the other clients are completely ignored.

[Table 7]

2.5 Robustness Check

We conduct two further treatments with four and eight clients where a big audit firm (i.e., Typ-1-Audit-Firm) with 1,000 hours competes with a very small audit firm (i.e., Typ-2-Audit-Firm) which is only endowed with 200 hours. We observe that the small audit firms are

applying a clear "Guerilla Strategy" regardless of whether four or eight clients are tendered. Big audit firms generally choose a "High-Stakes-On-All-Clients" strategy to acquire all clients. Only in the case with eight clients, the small audit firm is able to win one client by its own effort. On average, big audit firms acquire approximately 7 clients in this case. In the situation with four clients, small audit firms only acquire a client by the generosity of the big audit firm. This can, for example, be explained by inequality aversion of the big audit firm (see, among others, Fehr and Schmidt, 1999, Bolton and Ockenfels, 2000, Charness and Rabin, 2002). However, this generosity is only observed twice in our sample. Since these findings are not in contrast to our expectations and in line with our previous observations, we decided not reporting these results in more detail.

3 Experiment 2

3.1 Experimental Design

In our first experiment, if an audit firm acquires an audit client, this will effect only the current period, but has no effect on future audit tendering processes. However, in real markets we would expect a positive effect of an acquired client on the competitiveness of the audit firm. This higher level of competitiveness can, for example, be explained by a higher level of reputation or experience resulting from current audit clients or simply by the fact that an acquired client has a positive effect on the budget of an audit firm which can increase the audit quality finally.[9] In turn, a higher level of competitiveness will increase the probability that this audit firm acquires clients in the future. As a consequence, such effects will have an important influence on the development of the audit market.

To capture these effects, we modify the experiment with respect to the endowment of hours at the beginning of each period.[10] Whereas this endowment is constant in every period in the first experiment (either 1,000 or 600 hours), the endowment of the next period now depends on the number of acquired clients in the current period. In particular, each acquired client increases the endowment of the next period by a constant amount. Dependent on the treatment, this accumulation amount is either 30 (*Accumulation-30-Treatment*) or 60 hours (*Accumulation-60-Treatment*) for both types of audit firms. To allow for a comparison of both experiments, we use the (constant) endowments of the first experiment as the initial

[9] For example, Moizer (1997) suggest that prestigious audit clients have a positive effect on reputation of an audit firm.

[10] Instructions are presented in appendix A1.3.

endowment in the second experiment. Therefore, the initial endowment in the first period is either 1,000 or 600 hours. For each acquired client, this endowment increases by either 30 or 60 hours.[11] For the first case, for example, if an audit firm is confronted with an initial endowment of 1,000 and acquires three clients in period 1, the endowment is 1,120 $(=1{,}000+3\cdot 30)$ at the beginning of period 2. If this firm acquires five clients in period 2, the endowment is 1,270 $(=1{,}120+5\cdot 30)$ at the beginning of period 3 and so on.

The main purpose of this new experimental environment is to investigate the development and the dynamic effects on a market with a big and a small audit firm. In particular, we want to analyze whether a big audit firm is able to decrease the market share of the small audit firm markedly or is even able to push the small audit firm out of the market. As a consequence, we only apply the asymmetric case in which the Type-1-Audit-Firm (Type-2-Audit-Firm) is initially endowed with 1,000 (600) hours.[12] In the first experiment, we observed that the small audit firms are better off if eight instead of four clients do exist (see section 2.2 and table 3). To lower the probability that subjects who fill the role of the small audit firm are not able to acquire clients after some periods (in the cases when the big audit firm is too big) and therefore are not able to earn money from this experiment, we decided to only investigate the case with eight clients.[13] Table 8 gives an overview on our two new (between-subject design) treatments including the number of participants per treatment.

[Table 8]

3.2 Results

We focus on four dependent variables: 1) the number of clients the Type-1-Audit-Firm has acquired, 2) the relation between the endowments (in hours) of Type-1- and Type-2-Audit-Firm after accumulation, 3) the quality level per acquired client, and 4) the different bidding

[11] Since we do not distinguish between the clients who can be acquired (i.e., one client is of equal value as another client), we use the same constant accumulation amount for each acquired client.

[12] Although we apply the asymmetric 1000-600 case, we decided to use the same accumulation amount for both audit types. This implies that one acquired audit client has an identical impact on the endowment for the small as for the big audit firm in absolute terms, but a greater impact in relative terms. Although other constellations are theoretically possible in real markets, we do not have evidence that a small audit firm would generally benefit less or more than a big audit firm in absolute terms from the same client.

[13] Compared to the first experiment, we only modify how the endowment of one period is determined. Everything else is kept constant. In particular, each group still consists of two audit types who compete in 15 periods whereas one period is chosen randomly at the end of the experiment to determine payoff. The only exemption is that we now use three instead of two training periods since the decision problem in the second experiment is a little bit more complicated than in the first experiment. Analogously to the first experiment, the audit firm, who has the highest number of audit hours at the beginning of a period, will win the client if both audit firms allocated the same amount of hours to this client.

strategies. The 1000-600-Treatment with eight clients (but without accumulation) from the first experiment is used for comparison and serves as a reference treatment. In the following, we call this treatment *No-Accumulation-Treatment*. Table 9 presents the descriptive statistics for the number of clients the Type-1-Audit-Firm has acquired in each treatment over all periods. Figure 4 displays the number of clients on average for each period and treatment. As observed in the first experiment, the number of clients the Type-1-Audit-Firm has acquired remains almost stable and constant over time. Especially in the Accumulation-60-Treatement, we observe that approximately six clients are acquired on average by the Type-1-Audit-Firm in every single period. Again, we find that Type-1-Audit-Firms acquire more clients than Type-2-Audit-Firms. Over all periods, the Type-1-Audit-Firm gains 5.24 (5.93) clients in the Accumulation-30-Treatment (Accumulation-60-Treatment) on average. The differences between the Type-1- and Type-2-Audit-Firm are highly significant in all treatments ($p < 0.001$, Wilcoxon signed-rank test, two-tailed).

With respect to the differences between the treatments, we observe only small differences. On average, the number of clients is 5.24 and 5.52 in the Accumulation-30- and No-Accumulation-Treatment, respectively. Over all periods, this difference is statistically significant at the 5%-level ($p = 0.033$, Mann-Whitney U test, two-tailed). However, figure 4 reveals that both treatments differ only in the first 6 periods. In later periods, the results look very similar. If we take, for example, the results of the last 10 periods only, no statistically significant difference is observed ($p = 0.473$, Mann-Whitney U test, two-tailed). Therefore, we can conclude that the number of clients acquired by the Type-1-Audit-Firm is the same in the Accumulation-30- and No-Accumulation-Treatment. In the Accumulation-60-Treatment, we observe a mean number of clients of 5.93. Although this value is only slightly different to the values of the other two treatments, the differences are statistically significant at the 1%-level ($p < 0.001$ for both comparisons, Mann-Whitney U test, two-tailed).

[Table 9]

[Figure 4]

Figure 5 presents the mean relation between the endowments (in hours) of Type-1- and Type-2-Audit-Firm after accumulation (i.e., the endowment available in the next period) for each treatment and period. Since an acquired client does not increase the endowment of the next period in the No-Accumulation-Treatment, the relation is constant (1.667 = 1000/600) in this case. In both treatments with accumulation, we observe an increase of the relation. This

implies that the Type-1-Audit-Firms benefit from their superior starting position with an initial endowment of 1,000 hours and are able to increase their endowment in the following periods much more than the Type-2-Audit-Firms with an initial endowment of only 600 hours. Whereas the increase is moderate in the Accumulation-30-Treatment, we observe a sharp increase in the Accumulation-60-Treatment.[14] All differences between the treatments are statistically significant ($p < 0.001$ for all three treatment comparisons, Mann-Whitney U test, two-tailed).

Although we expected this development, we are surprised that the permanent improvement of the competitiveness level of Type-1-Audit-Firms did not lead to an increased number of acquired clients. In contrast, the average number of clients acquired by this type of audit firm remains almost stable over the periods (see figure 4). This is especially unexpected in the Accumulation-60-Treatment. Here we observe a heavy increase of endowment relation (from 1.667 in the beginning to 2.834 in the last period), but a nearly constant number of acquired clients of approximately 6. Furthermore, if we focus on the last period only, we observe a 70% higher endowment relation on average in the Accumulation-60- than in the No-Accumulation-Treatment (2.834/1.667), but the number of clients acquired by the Type-1-Audit-Firms is only about 10% higher (5.92/5.36). In the Accumulation-30-Treatment the relation is about 18% higher than in the No-Accumulation-Treatment (1.965/1.667), but the number of acquired clients is even slightly lower (5.27 vs. 5.36). As a consequence, we can summarize: Although the competitive advantage increases over-proportionally over time, we do not observe that our big audit firms (i.e., Type-1-Audit-Firms) are able to decrease the market share of the small audit firms markedly or are even able to push the small audit firms out of the market.

[Figure 5]

Table 10 presents the quality level (in hours) on average per acquired clients for each type of audit firm over all periods and figure 6 displays the quality level over time. In line with the results from the first experiment, we observe that Type-2-Audit-Firms provide a significantly higher quality level per acquired client than Type-1-Audit-Firms in both accumulation treatments ($p < 0.001$ for both the Accumulation-30- and Accumulation-60-Treatment, Mann-Whitney U test, two-tailed). In fact, the difference is even more pronounced in these

[14] The mean endowment after accumulation is 1,477 / 2,234 / 3,032 (843 / 1,286 / 1,688) in the periods 1-5 / 6-10 / 11-15 for the Type-1-Audit-Firms (Type-2-Audit-Firms) in the Accumulation-30-Treatment. The values for the Accumulation-60-Treatment are 2,025 / 3,810 / 5,611 (1,015 / 1,630 / 2,229), respectively.

treatments than in the No-Accumulation-Treatment (see table 10). Although the endowment relation increases in favor of Type-1-Audit-Firms in both accumulation treatments, figure 6 reveals that the quality level gap between Type-2- and Type-1-Audit-Firms increases slightly over time (especially in the Accumulation-60-Treatment). Again, we can conclude that the quality level of an audit is significantly higher if the client is acquired by a small audit firm.

[Table 10]

[Figure 6]

To confirm these descriptive results, we run linear regression models with random effects, again. We use the same approach as described in section 2.4 (table 5). In model 3 to 5, the dependent variable is the number of acquired clients in a period. In model 6, we use the mean quality level (in hours) per acquired client in a period as dependent variable. The results of these models are displayed in table 11 (regression coefficients, robust standard errors in parentheses clustered at the subject level). To analyze the treatment effects, we use treatment dummy variables. The dummy variable "Accumulation-30-Treatment" ("Accumulation-60-Treatment") takes the value 1 if a subject participated in the Accumulation-30-Treatment (Accumulation-60-Treatment) and 0 otherwise. The No-Accumulation-Treatment serves as the default and, therefore, the coefficient of each treatment dummy measures the difference between the respective treatment and the No-Accumulation-Treatment. After each regression, we conducted Wald tests to analyze whether the coefficients of both treatment dummy variables differ significantly. The resulting p-values are presented at the end of the table.

In model 3 in which the data of Type-1- and Type-2-Audit-Firms is considered, we observe that Type-2-Audit-Firms significantly acquire less audit clients. This supports our previous finding. Although we observed slight differences between the treatments in our descriptive analyses, the treatment coefficients are not significant and the Wald test indicates that there is no difference between both accumulation treatments. However, we split the data to analyze the treatment differences further. In model 4 in which only Type-1-Audit-Firms are considered, we observe no significant differences between each accumulation treatment and the No-Accumulation-Treatment, again, but a significant difference between both accumulation treatments ($p=0.0092$). This implies that Type-1-Audit-Firms are able to significantly acquire more audit clients in the Accumulation-60- than in the Accumulation-30-Treatment. This result is supported by model 5 in which only Type-2-Audit-Firms are considered. In particular, Type-2-Audit-Firms acquire significantly less audit clients in the former than in the

latter treatment (p=0.004). Furthermore, we observe that Type-2-Audit-Firms are able to acquire more clients in the No-Accumulation- than in the Accumulation-60-Treatment (significant at the 10%-level). However, the difference between the No-Accumulation- and Accumulation-30-Treatment is not significant, again. In all three models we find that the variable period is not significant which indicates that our results are stable over time. In model 6, we are able to confirm our previous result that the audit quality is significantly higher when the audit client is acquired by a Type-2-Audit-Firm. As each acquired client leads to an increase of the endowment of hours, it is not surprising that both treatment dummy variables and the variable period have positive and highly significant coefficients.

[Table 11]

In table 12, we present the results of two linear regressions (model 7 and 8) with the endowment of hours after accumulation (i.e., endowment of hours available in the next period) as dependent variable. As main independent variables, we use the dummy variable "Type-2-Audit-Firm" and the variable "period", again. Furthermore, we regress on the interaction term "Type-2-Audit-Firm X period" to analyze the different endowment development between both types of audit firms over time. Independent of whether we focus on the Accumulation-30- (model 7) or Accumulation-60-Treatment (model 8), we observe that the endowment of hours is significantly lower for Type-2- than for Type-1-Audit-Firms. This result is not surprisingly as Type-2-Audit-Firms start with lower endowments and are generally not able to achieve the higher level of Type-1-Audit-Firms in the course of the experiment. With respect to the variable period, we observe a positive and highly significant influence on the endowment of hours. This is due to our experimental design since acquiring an audit client leads automatically to an increase of the endowment of hours in both accumulation treatments. However, the negative and highly significant interaction term "Type-2-Audit-Firm X period" indicates that the increase is much higher for Type-1- than for Type-2-Audit-Firms in both accumulation treatments. This supports our previous findings and explains the increase of the mean relation between the endowments (in hours) of Type-1- and Type-2-Audit-Firms depicted in figure 5.

[Table 12]

To analyze the acquisition strategies of the two types of audit firms, we define different strategies dependent on the chosen quantity levels (in hours), again. We use the same approach as in the first experiment. However, we take the decisions of all periods for the

categorization since the endowment of hours varies from period to period in the accumulation treatments. In tables A7 to A10 in appendix A4, we present a detailed overview on the observed allocations and the corresponding strategy assignments. Table 13 presents the distribution of revealed strategies. The mean number of acquired clients resulting from a strategy is displayed in brackets. Whereas Type-1-Audit-Firms apply different strategies in the No-Accumulation-Treatment, we observe a clear decision pattern in both accumulation treatments. In the Accumulation-30-Treatment, nearly 80% of the Type-1-Audit-Firms use a "High-Stakes-On-6-Clients" (20.0%), "High-Stakes-On-7-Clients" (28.5%), or a "High-Stakes-On-8-Clients" (29.1%) strategy. In the Accumulation-60-Treatment, most subjects apply a "High-Stakes-On-8-Clients" strategy (53.9%). Interestingly, in both treatments the number of acquired clients is similar across all strategies. With respect to the Type-2-Audit-Firms, we observe the same decision pattern in the accumulation treatments as in the No-Accumulation-Treatment. In the Accumulation-30-Treatment, nearly 75% of the subjects use a "High-Stakes-On-3-Clients" (45.5%) or a "High-Stakes-On-4-Clients" (27.9%) strategy resulting in a mean number of acquired clients of approximately 2.7. In the Accumulation-60-Treatment, approximately 90% apply a "High-Stakes-On-2-Clients" (26.2%), "High-Stakes-On-3-Clients" (35.9%), or a "High-Stakes-On-4-Clients" (28.7%) strategy where the highest number of acquired clients is observed in the latter case. To summarize: In both accumulation treatments, the big audit firms apply strategies to acquire nearly all clients. The small audit firms use a clear "Guerilla Strategy" which means that each firm concentrates on two, three, or four clients only.

[Table 13]

4 Summary

We conducted a laboratory experiment to analyze the strategical behavior of audit firms in a tendering process. We can draw the following conclusions from our main results. First, if two big audit firms are competing (1000-1000-Treatments), we do not observe that they invest high stakes on each client to acquire all clients. In contrast, if one big and one small audit firm are competing (1000-600-Treatments), the big audit firms apply strategies to acquire nearly all clients. The only exemption occurs in the No-Accumulation-Treatment (1000-600-Treatment with eight clients) where big audit firms apply many different strategies. In all treatments, we observe that small audit firms use a clear "Guerilla Strategy" which means that each firm concentrates only on few clients whereas the other clients are almost ignored.

Second, whereas the clients are shared equally in case of two big audit firms, the big audit firm is better off and acquires (as expected) significantly more clients in case of one big and one small audit.

Third, comparing the 4-Clients- and 8-Clients-Treatment in the first experiment reveals that small audit firms are able to acquire more clients relatively and therefore are better off if more clients do exist in the tendering process. As a consequence for real markets, if the competitiveness of smaller audit firms should be enhanced, the legislator should ensure that more audit clients are tendered. Fourth, in all treatments of both experiments, we observe that the number of clients acquired by each audit firm type remains almost stable over time. Although this is to be expected in the first experiment, we are surprised that this occurs in the second experiment with accumulation as well. In both accumulation treatments, we find that big audit firms benefit from their superior starting position with an initial endowment of 1,000 hours and are able to increase their endowment in the following periods much more than the small audit firms with an initial endowment of only 600 hours. Although this implies that the competitive advantage of big audit firms increases over-proportionally over time, we do not observe that the big audit firms are able to decrease the market share of the small audit firms markedly or are even able to push the small audit firms out of the market.

Fifth, in all treatments, we find that small audit firms choose a significantly higher quality level per acquired client than big audit firms. This finding is in contrast to DeAngelo (1981b) who argues that the audit quality of larger audit firms is higher because they have more to lose than smaller audit firms. For real markets, this implies that increasing the number of smaller audit firms could increase the quality level of the audit market as well.

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Table 1: Overview on treatments in experiment 1

	1000-1000-Treatment		**1000-600-Treatment**	
	4-Clients-Treatment	8-Clients-Treatment	4-Clients-Treatment	8-Clients-Treatment
Number of clients	4	8	4	8
Endowment of Type-1-Audit-Firm	1,000	1,000	1,000	1,000
Endowment of Type-2-Audit-Firm	1,000	1,000	600	600
No. of subjects	22	20	24	22

Note: This table highlights the differences between the four (between-subject design) treatments in our first experiment.

Table 2: Descriptive statistics for individual characteristics

	mean	**median**	**standard deviation**
age	23.21	22.00	5.16
female	51.47%		
econ major	25.74%		
bachelor's degree	75.00%		
no. of semesters studied	4.34	4.00	2.74
risk aversion	5.77	6.00	1.31
income (in Euro)	264.01	250.00	190.40

Note: This table gives an overview on the individual characteristics of the 136 participants of the experiment. "Economics major"("bachelor's degree") denotes whether a subject studies economics or management (in a bachelor's degree program). We use the total number of low risk lottery choices in the Holt-Laury-Task (i.e., lottery A) as our measure for subject's risk aversion which is measured on an 11-point Likert scale where 0 = very risk seeking and 10 = very risk averse. "Income" is the monthly income after fixed cost.

Table 3: Number of clients the Type-1-Audit-Firm has acquired in experiment 1

		4-Clients-Treatment	8-Clients-Treatment
1000-1000-Treatment	mean	1.96	3.90
	median	2	4
	standard deviation	0.59	1.14
	minimum	1	1
	maximum	3	7
	no. of observations	165	180
1000-600-Treatment	mean	2.92	5.52
	median	3	5
	standard deviation	0.66	0.92
	minimum	2	4
	maximum	4	8
	no. of observations	150	165

Note: This table presents the descriptive statistics for the number of clients the Type-1-Audit Firm (with an endowment of 1,000) has acquired in each treatment of experiment 1 over all periods.

Table 4: Quality level on average per acquired client in experiment 1

		Typ-1-Audit-Firm	Typ-2-Audit-Firm
1000-1000-Treatment	4-Clients-Treatment	354.2	
	8-Clients-Treatment	176.1	
1000-600-Treatment	4-Clients-Treatment	269.2	311.4
	8-Clients-Treatment	137.7	149.7

Note: This table presents the quality level (in hours) on average per acquired client in each treatment of experiment 1 over all periods. Since both types of audit firms face the same endowment of 1,000 hours in the 1000-1000-Treatment and therefore are confronted with absolute the same decision problem, we do not differentiate between both types in this case.

Table 5: Linear regression models with random effects (1000-600-Treatments, experiment 1)

Model	**model 1**	**model 2**
Dependent variable	**number of acquired clients**	**mean quality level (in hours) per acquired client**
Type-2-Audit-Firm	-2.6220***	23.0915**
	(0.1527)	(9.4883)
8-Clients-Treatment	2.1266***	-150.0785***
	(0.1550)	(12.8636)
period	-0.0009	-0.1839
	(0.0108)	(0.5534)
age	0.0467***	1.3831
	(0.0143)	(1.1208)
gender	0.0197	11.9120
	(0.1475)	(11.7863)
economics major	0.3909**	-10.4655
	(0.1732)	(20.3192)
bachelor's degree	0.0622	20.2217**
	(0.2043)	(8.1543)
no of semesters studied	0.0114	0.3505
	(0.0337)	(1.3858)
risk aversion	-0.0470	-0.8724
	(0.0638)	(3.8060)
income	-0.0002	-0.0123
	(0.0003)	(0.0223)
constant	2.2160***	234.3635***
	(0.4946)	(31.5960)
observations	615	584
no. of subjects	41	41
R-sq within	0.0000	0.0006
R-sq between	0.9301	0.8721
R-sq overall	0.7808	0.7388

Note: In this table, the results of linear regression models with random effects (where the period number is the time variable and the subject's identity number is the cross-sectional variable) are presented (regression coefficients, robust standard errors in parentheses clustered at the subject level). In model 1, the dependent variable is the number of acquired clients in a period. In model 2, we use the mean quality level (in hours) per acquired client in a period as dependent variable. In both models, we regress on two dummy variables. The dummy "Type-2-Audit-Firm" takes the value 1 if a subject acts as a manager of a Type-2-Audit-Firm and 0 in case of a Type-1-Audit-Firm. The dummy "8-Clients-Treatment" takes the value 1 if a subject participated in the 8-Clients-Treatment and 0 if a subject was assigned to the 4-Clients-Treatment. As controls we use the number of periods ("period") to control for time effects, "age", "gender" (female = 0, male = 1), "economics major" (1 if subject studies economics or management, 0 otherwise), "bachelor's degree" (1 if subject studies in a bachelor's degree program, 0 otherwise), "number of semesters studied", "risk aversion" denotes the total number of low risk lottery choices in the Holt-Laury-Task (i.e., lottery A) and is our measure for subject's risk aversion (measured on an 11-point Likert scale where 0 = very risk seeking and 10 = very risk averse), "income" is the monthly income after fixed cost (in Euro). *** $p \leq 0.01$, ** $p \leq 0.05$, * $p \leq 0.1$.

Table 6: Revealed acquisition strategies in the 4-Clients-Treatment

Strategy	1000-1000-Treatment	1000-600-Treatment	
	Type-1- and Type-2-Audit-Firm	Type-1-Audit-Firm	Type-2-Audit-Firm
High-Stake-On-1-Client	0.9% (1.00)	0.0% (NA)	0.0% (NA)
High-Stakes-On-2-Clients	**40.9%** **(2.04)**	2.0% (2.00)	**88.0%** **(1.41)**
High-Stakes-On-3-Clients	**35.5%** **(2.05)**	36.0% (2.67)	8.0% (0.75)
High-Stakes-On-4-Clients	22.7% (1.92)	**62.0%** **(2.70)**	4.0% (1.0)

Note: This table presents the distribution of revealed strategies over all periods separated by treatment. The mean number of acquired clients resulting from a strategy is displayed in brackets. Since both types of audit firms face the same endowment of 1,000 hours in the 1000-1000-Treatment and therefore are confronted with absolute the same decision problem, we do not differentiate between both types in this case. If data is not available, this is denoted by "NA".

Table 7: Revealed acquisition strategies in the 8-Clients-Treatment

Strategy	1000-1000-Treatment	1000-600-Treatment	
	Type-1- and Type-2-Audit-Firm	Type-1-Audit-Firm	Type-2-Audit-Firm
High-Stake-On-1-Client	0.0% (NA)	7.3% (5.0)	5.5% (1.67)
High-Stakes-On-2-Clients	0.0% (NA)	10.9% (5.67)	1.8% (3.00)
High-Stakes-On-3-Clients	2.5% (4.00)	**14.6%** **(5.00)**	**56.4%** **(2.61)**
High-Stakes-On-4-Clients	20.0% (4.17)	**29.1%** **(5.94)**	**34.6%** **(2.63)**
High-Stakes-On-5-Clients	**60.0%** **(4.05)**	5.5% (5.67)	0.0% (NA)
High-Stakes-On-6-Clients	9.2% (3.64)	**14.6%** **(6.00)**	1.8% (1.00)
High-Stakes-On-7-Clients	4.2% (4.40)	0.0% (NA)	0.0% (NA)
High-Stakes-On-8-Clients	4.2% (3.00)	**18.2%** **(4.80)**	0.0% (NA)

Note: This table presents the distribution of revealed strategies over all periods separated by treatment. The mean number of acquired clients resulting from a strategy is displayed in brackets. Since both types of audit firms face the same endowment of 1,000 hours in the 1000-1000-Treatment and therefore are confronted with absolute the same decision problem, we do not differentiate between both types in this case. If data is not available, this is denoted by "NA".

Table 8: Overview on treatments in experiment 2

	Accumulation-30-Treatment	Accumulation-60-Treatment
Number of clients	8	8
Initial endowment of Type-1-Audit-Firm	1,000	1,000
Initial endowment of Type-2-Audit-Firm	600	600
Accumulation amount (for both types of audit firms)	30	60
No. of subjects	22	26

Note: This table highlights the differences between the two (between-subject design) treatments in our second experiment.

Table 9: Number of clients the Type-1-Audit-Firm has acquired in experiment 2

	No-Accumulation-Treatment	**Accumulation-30-Treatment**	**Accumulation-60-Treatment**
mean	5.52	5.24	5.93
median	5	5	6
standard deviation	0.92	1.29	1.05
minimum	4	2	4
maximum	8	8	8
no. of observations	165	165	195

Note: This table presents the descriptive statistics for the number of clients the Type-1-Audit Firm (with an initial endowment of 1,000) has acquired in each treatment of experiment 2 over all periods. The results of the 1000-600-Treatment with 8 clients from the first experiment are displayed for comparison ("No-Accumulation-Treatment").

Table 10: Quality level on average per acquired client in experiment 2

	Typ-1-Audit-Firm	**Typ-2-Audit-Firm**
No-Accumulation-Treatment	137.7	149.7
Accumulation-30-Treatment	286.6	343.0
Accumulation-60-Treatment	445.7	550.8

Note: This table presents the quality level (in hours) on average per acquired client in each treatment of experiment 2 over all periods. The results of the 1000-600-Treatment with 8 clients from the first experiment are displayed for comparison ("No-Accumulation-Treatment").

Table 11: Linear regression models with random effects (No Accumulation-Treatment, Accumulation-30-Treatment, Accumulation-60-Treatment, experiment 2)

Model	**model 3**	**model 4**	**model 5**	**model 6**
Dependent variable	**number of acquired clients**	**number of acquired clients**	**number of acquired clients**	**mean quality level (in hours) per acquired client**
Type of audit firm	**Type-1- and Type-2-Audit-Firms**	**Only Type-1-Audit-Firms**	**Only Type-2-Audit-Firms**	**Type-1- and Type-2-Audit-Firms**
Type-2-Audit-Firm	-3.1234***			61.6302***
	(0.1856)			(11.7198)
Accumulation-30-Treatment	-0.0413	-0.6254	0.4168	170.7100***
	(0.2977)	(0.4628)	(0.3086)	(14.7460)
Accumulation-60-Treatment	0.0412	0.2998	-0.5502*	347.3319***
	(0.2279)	(0.2830)	(0.2927)	(15.6884)
period	-0.0027	0.0054	-0.0106	27.1682***
	(0.0094)	(0.0133)	(0.0134)	(2.8434)
age	0.0055	-0.0700	0.0876**	-7.4968**
	(0.0435)	(0.0721)	(0.0432)	(3.2244)
gender	-0.3271*	-0.4909*	-0.1294	-5.2994
	(0.1974)	(0.2550)	(0.2225)	(11.0230)
economics major	-0.0024	-0.0504	0.3339	-11.3833
	(0.2175)	(0.3068)	(0.2541)	(11.8566)
bachelor's degree	0.0456	0.4948	-0.3601	-44.1147*
	(0.3481)	(0.4808)	(0.3029)	(24.1958)
no of semesters studied	0.0176	0.0863	-0.0759	6.2786*
	(0.0511)	(0.0549)	(0.0784)	(3.3476)
risk aversion	0.0658	0.1596**	-0.0120	-1.3348
	(0.0654)	(0.0802)	(0.0930)	(4.3592)
income	0.0002	0.0014	0.0006*	0.0315
	(0.0004)	(0.0011)	(0.0003)	(0.0228)
constant	5.0999***	5.3642***	1.0687	83.7714
	(0.9930)	(1.7594)	(0.8812)	(74.3997)
observations	1,005	495	510	982
no. of subjects	67	33	34	67
R-sq within	0.0002	0.0008	0.0031	0.5258
R-sq between	0.8162	0.4132	0.3108	0.9221
R-sq overall	0.6687	0.1978	0.1473	0.7193
Wald test: Accumulation-30-TR = Accumulation-60-TR	p=0.7540	p=0.0092	p=0.0004	p<0.0001

Note: In this table, the results of linear regression models with random effects (where the period number is the time variable and the subject's identity number is the cross-sectional variable) are presented (regression coefficients, robust standard errors in parentheses clustered at the subject level). In model 3 to 5, the dependent variable is the number of acquired clients in a period. In model 6, we use the mean quality level (in hours) per acquired client in a period as dependent variable. In models 3 and 6, we regress on the dummy variable "Type-2-Audit-Firm" which takes the value 1 if a subject acts as a manager of a Type-2-Audit-Firm and 0 in case of a Type-1-Audit-Firm. The dummy variable "Accumulation-30-Treatment" ("Accumulation-60-Treatment") takes the value 1 if a subject participated in the Accumulation-30-Treatment (Accumulation-60-Treatment) and 0 otherwise. The No-Accumulation-Treatment serves as the default. The resulting p-values of Wald tests analyzing whether the coefficients of both treatment dummy variables differ significantly are presented at the end of this table. As controls we use the number of periods ("period") to control for time effects, "age", "gender" (female = 0, male = 1), "economics major" (1 if subject studies economics or management, 0 otherwise), "bachelor's degree" (1 if subject studies in a bachelor's degree program, 0 otherwise), "number of semesters studied", "risk aversion" denotes the total number of low risk lottery choices in the Holt-Laury-Task (i.e., lottery A) and is our measure for subject's risk aversion (measured on an 11-point Likert scale where 0 = very risk seeking and 10 = very risk averse), "income" is the monthly income after fixed cost (in Euro). *** $p \leq 0.01$, ** $p \leq 0.05$, * $p \leq 0.1$.

Table 12: Linear regression models with random effects (Accumulation-30-Treatment, Accumulation-60-Treatment, experiment 2)

Model	**model 7**	**model 8**
Dependent variable	**endowment of hours after accumulation** (i.e., endowment available in the next period)	
Treatment	**Accumulation-30-Treatment**	**Accumulation-60-Treatment**
Type-2-Audit-Firm	-298.4374***	-435.3122***
	(82.1868)	(113.8476)
period	152.1786***	358.6319***
	(10.1096)	(13.1162)
Type-2-Audit-Firm X period	-67.9545***	-234.6676***
	(13.3682)	(19.1342)
age	57.3086	-8.1609
	(61.1786)	(41.5475)
gender	-156.1100	128.0037
	(109.7466)	(150.6692)
economics major	106.6781	-90.1329
	(140.7339)	(167.0462)
bachelor's degree	-80.6528	-87.6460
	(241.0021)	(201.5669)
no of semesters studied	-8.9807	9.1369
	(37.3700)	(31.0130)
risk aversion	-39.6291	60.7470
	(54.2372)	(38.4237)
income	0.4106	0.6244**
	(0.5111)	(0.2781)
constant	0.5979	677.7690
	(1,167.4662)	(930.5058)
observations	300	375
no. of subjects	20	25
R-sq within	0.9418	0.9706
R-sq between	0.8921	0.9363
R-sq overall	0.9175	0.9543

Note: In this table, the results of linear regression models with random effects (where the period number is the time variable and the subject's identity number is the cross-sectional variable) are presented (regression coefficients, robust standard errors in parentheses clustered at the subject level). The dependent variable is the endowment of hours after accumulation. In model 7 (8), we consider the results from the Accumulation-30-Treatment (Accumulation-60-Treatment). In both models, we use the number of periods ("period") to control for time effects and we regress on the dummy variable "Type-2-Audit-Firm" which takes the value 1 if a subject acts as a manager of a Type-2-Audit-Firm and 0 in case of a Type-1-Audit-Firm. The variable "Type-2-Audit-Firm X period" is an interaction term between the dummy variable "Type-2-Audit-Firm" and the variable "period". As controls we use "age", "gender" (female = 0, male = 1), "economics major" (1 if subject studies economics or management, 0 otherwise), "bachelor's degree" (1 if subject studies in a bachelor's degree program, 0 otherwise), "number of semesters studied", "risk aversion" denotes the total number of low risk lottery choices in the Holt-Laury-Task (i.e., lottery A) and is our measure for subject's risk aversion (measured on an 11-point Likert scale where 0 = very risk seeking and 10 = very risk averse), "income" is the monthly income after fixed cost (in Euro). *** $p \leq 0.01$, ** $p \leq 0.05$, * $p \leq 0.1$.

Table 13: Revealed acquisition strategies in experiment 2

Strategy	No-Accumulation-Treatment		Accumulation-30-Treatment		Accumulation-60-Treatment	
	Type-1-Audit-Firm	Type-2-Audit-Firm	Type-1-Audit-Firm	Type-2-Audit-Firm	Type-1-Audit-Firm	Type-2-Audit-Firm
High-Stake-On-1-Client	7.3% (5.0)	5.5% (1.67)	0.0% (NA)	0.6% (1.00)	0.0% (NA)	5.6% (0.82)
High-Stakes-On-2-Clients	10.9% (5.67)	1.8% (3.00)	1.8% (5.33)	11.5% (1.95)	0.5% (6.00)	**26.2% (1.65)**
High-Stakes-On-3-Clients	**14.6% (5.00)**	**56.4% (2.61)**	1.8% (4.66)	**45.5% (2.57)**	2.1% (6.00)	**35.9% (2.14)**
High-Stakes-On-4-Clients	**29.1% (5.94)**	**34.6% (2.63)**	9.1% (5.06)	**27.9% (2.80)**	5.1% (5.40)	**28.7% (2.64)**
High-Stakes-On-5-Clients	5.5% (5.67)	0.0% (NA)	9.7% (6.00)	10.3% (3.88)	11.8% (5.57)	3.1% (2.17)
High-Stakes-On-6-Clients	**14.6% (6.00)**	1.8% (1.00)	**20.0% (5.73)**	3.6% (4.50)	14.9% (5.93)	0.5% (0.00)
High-Stakes-On-7-Clients	0.0% (NA)	0.0% (NA)	**28.5% (5.38)**	0.6% (3.00)	11.8% (6.30)	0.0% (NA)
High-Stakes-On-8-Clients	**18.2% (4.80)**	0.0% (NA)	**29.1% (4.58)**	0.0% (NA)	**53.9% (5.97)**	0.0% (NA)

Note: This table presents the distribution of revealed strategies over all periods separated by treatment. The mean number of acquired clients resulting from a strategy is displayed in brackets. If data is not available, this is denoted by "NA". The results of the 1000-600-Treatment with 8 clients from the first experiment are displayed for comparison ("No-Accumulation-Treatment").

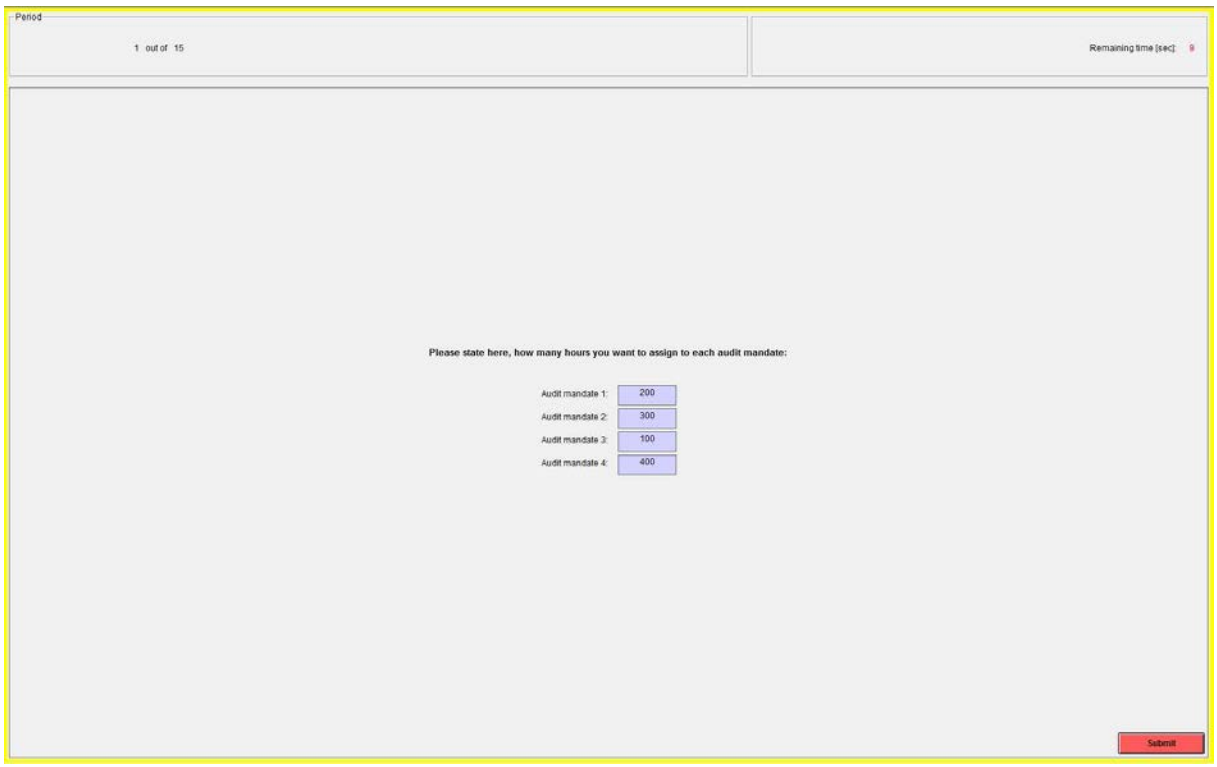

Figure 1: Exemplary screenshot of the negotiation stage

Note: This figure presents one exemplary screenshot of the negotiation stage in our experiment 1. The example is taken from the 1000-600-Treatment with four clients.

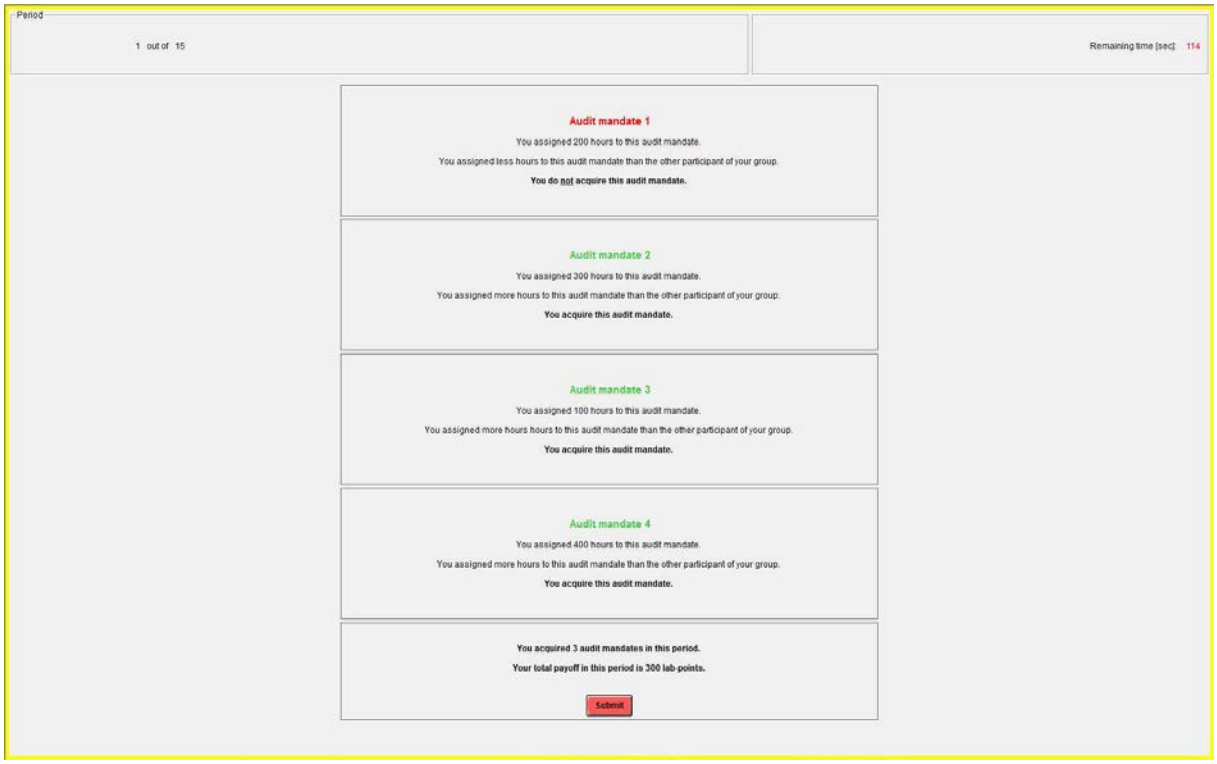

Figure 2: Exemplary screenshots of the outcome stage

Note: This figure presents one exemplary screenshot of the outcome stage in our experiment 1. The example is taken from the 1000-600-Treatment with four clients.

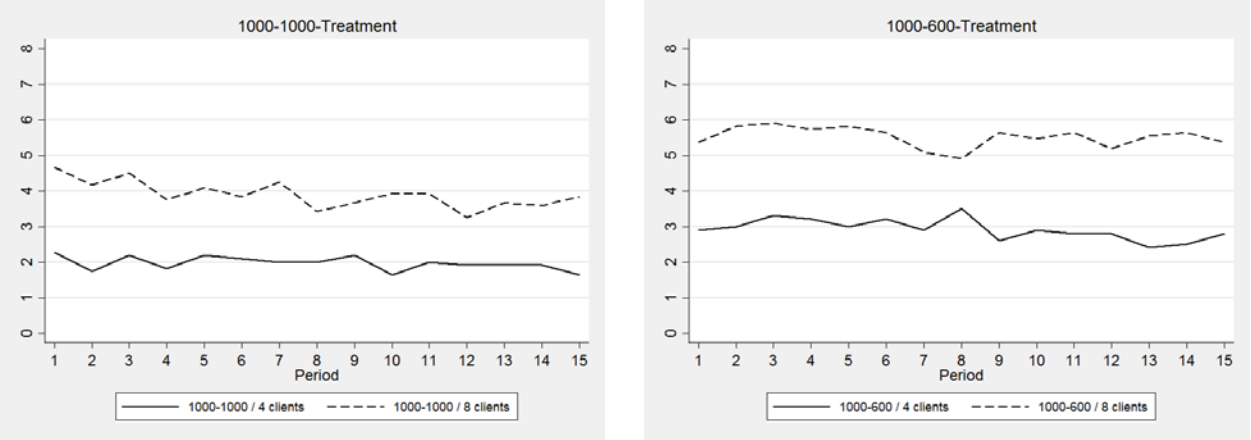

Figure 3: Average number of clients the Type-1-Audit-Firm has acquired in experiment 1

Note: In this figure the average number of clients the Type-1-Audit-Firm has acquired is displayed for each period and treatment.

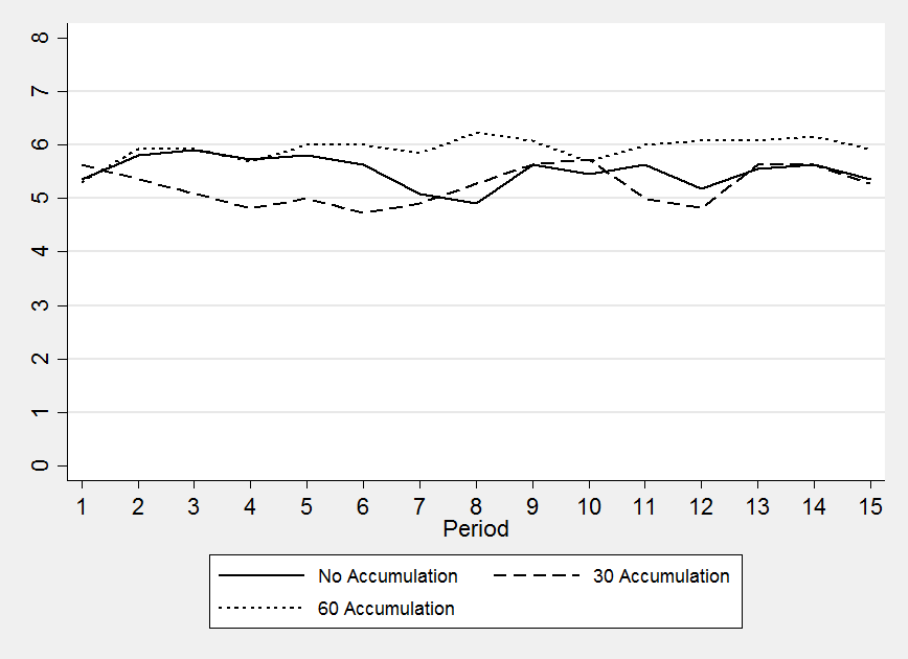

Figure 4: Average number of clients the Type-1-Audit-Firm has acquired in experiment 2

Note: In this figure the average number of clients the Type-1-Audit-Firm has acquired is displayed for each period and treatment. The results of the 1000-600-Treatment with 8 clients from the first experiment are displayed for comparison ("No Accumulation").

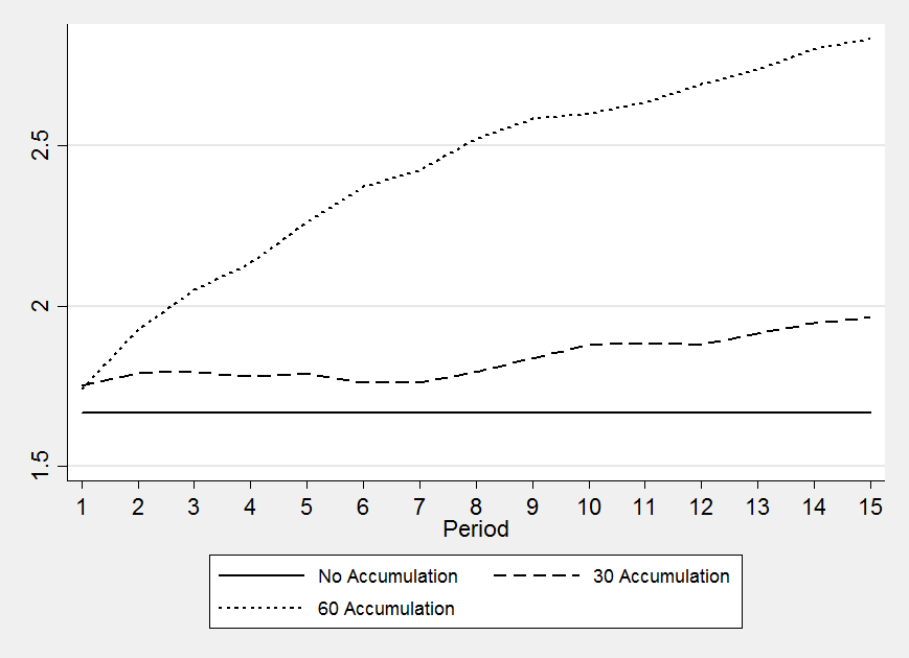

Figure 5: Mean relation between the endowments (in hours) of Type-1- and Type-2-Audit-Firm after accumulation

Note: In this figure the mean relation between the endowments (in hours) of Type-1- and Type-2-Audit-Firm after accumulation (i.e., endowment available in the next period) is displayed for each period and treatment. The constant relation of 1.667 (= 1000/600) of the 1000-600-Treatment from the first experiment is displayed for comparison (“No Accumulation”).

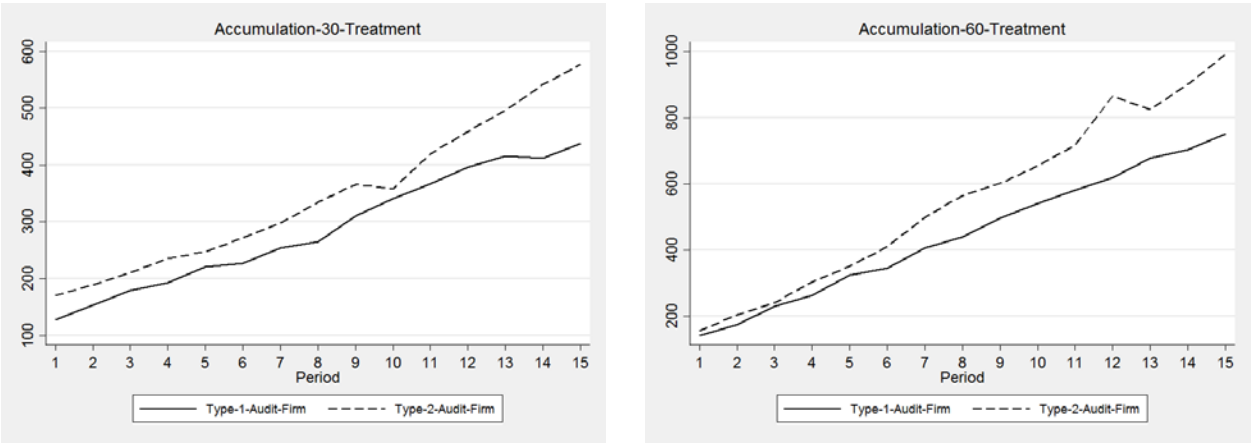

Figure 6: Quality level on average per acquired client in experiment 2

Note: In this figure the quality level (in hours) on average per acquired client in experiment 2 is displayed for each period and treatment.

Appendix

A1 Instructions (originally written in German)

A1.1 General Information

Thank you very much for your participation in the today's experiment. The experiment that you will participate in consists of two parts, in which you have the possibility to earn money. Before each part of the experiment, you will receive instructions explaining that part of the experiment. Next, that part of the experiment starts. After the second part of the experiment, the experiment ends and you will receive a payment that depends on the results of both parts of the experiment.

Please note that you are neither allowed to communicate with other participants nor allowed to leave your desk during the entire experiment. Please read the instructions thoroughly. If you have any questions, please, raise your hand. We will then come to you to answer your questions.

You will now receive the instructions for the first part of the experiment.

A1.2 Holt-Laury-Task

Please choose one of the two lotteries A or B in each of the following 10 decision situations by marking the corresponding box in the table.

You will make a decision for all 10 situations, but your payoff from this part of the experiment is determined only by the one situation that is randomly drawn after the experiment.

In each situation, you can either earn 2.00 € or 1.60 € from lottery A and either 3.85 € or 0.10 € from lottery B. The probabilities of winning, however, vary from situation to situation. The further down you move in the table, the higher is the probability of the higher payment and the lower is the probability of the lower payment.

After part 1 and 2 of the experiment are completed, you will be asked to roll a ten-faced die two times. Once to determine one of the ten decision situations and a second time to determine your payoff from the lottery that you have chosen in this decision situation. If the number you roll is lower or equals the probability of the higher payoff, you will receive the higher payoff. Otherwise, you will receive the lower payoff. Please note that the "1" on the die corresponds to the "10%" in the table; the "2" to the "20%" and so forth up to the "9." The "0" corresponds to the "100%."

	Lottery A	Lottery B	Your decision	
			A	B
1.	2,00 € with 10% or 1,60 € with 90%	3,85 € with 10% or 0,10 € with 90%	o	o
2.	2,00 € with 20% or 1,60 € with 80%	3,85 € with 20% or 0,10 € with 80%	o	o
3.	2,00 € with 30% or 1,60 € with 70%	3,85 € with 30% or 0,10 € with 70%	o	o
4.	2,00 € with 40% or 1,60 € with 60%	3,85 € with 40% or 0,10 € with 60%	o	o
5.	2,00 € with 50% or 1,60 € with 50%	3,85 € with 50% or 0,10 € with 50%	o	o
6.	2,00 € with 60% or 1,60 € with 40%	3,85 € with 60% or 0,10 € with 40%	o	o
7.	2,00 € with 70% or 1,60 € with 30%	3,85 € with 70% or 0,10 € with 30%	o	o
8.	2,00 € with 80% or 1,60 € with 20%	3,85 € with 80% or 0,10 € with 20%	o	o
9.	2,00 € with 90% or 1,60 € with 10%	3,85 € with 90% or 0,10 € with 10%	o	o
10.	2,00 € with 100% or 1,60 € with 0%	3,85 € with 100% or 0,10 € with 0%	o	o

A1.3 Audit Market Experiment

We divided the instructions of our actual experiment into different parts. The beginning part (appendix A1.3.1) is identical in all treatments, whereas the following part differs between the treatments (appendix A1.3.2 to A1.3.4). In the following, the instructions are presented.

A1.3.1 Beginning Instructions of All Treatments

In the second part of the experiment your payoff depends on your decisions, on the decisions of another participant and possibly on chance. These instructions will explain you, how you are able to influence your payoff by your decisions. Therefore, read the following paragraphs carefully. When all participants have understood the instructions, the experiment will start.

For reasons of simplicity, during the experiment there are no calculations in Euro-amounts, but in lab-points. At that 1 lab-point exactly corresponds to 5 Euro-cents. That means 100 lab-points exactly correspond to 5 Euros.

General information

In this experiment, you and one of the other participants form a group. The assignment to this group happens randomly at the beginning of the experiment and remains unchanged until the end of the experiment. You and the other participant of your group make the same decision which will be described in the following. The experiment consists of 15 periods which are independent of each other. At the end of the experiment, one period will be randomly chosen which determines your payoff.

Experimental background

In this experiment, decision situations of audit firms are simulated. One of their main activities is the examination of the annual financial statements of their audit clients. The audit client has the choice to choose an audit firm for the audit of their annual financial statement. To make a choice, the audit client tenders a so called ***audit mandate***. Audit firms are able to apply on this tendered audit mandates.

A crucial point for the selection decision is the warranted audit performance and the compensation which the audit client has to pay to the audit firm. The audit performance is the effort which an audit firm spends on the audit mandate. The performance mainly depends on the total number of hours which are spent on the audit mandate. As the demanded compensa-

tion for an audit will be likely the same between the audit firms in general, the audit clients principally make their selection decision on the basis of the warranted audit performance.

A1.3.2 Specific Instructions for the 1000-1000-Treatment and 8-Clients-Treatment (Instructions for 4-Clients-Treatment are accordingly)

Your task in the experiment

In the experiment, you are taking the role of a manager of an audit firm and you are responsible for the application on the audit mandates. In each period, there are in total 8 audit mandates for which you and the other participant of your group can apply. To apply on an audit mandate, you decide how many hours your audit firm will spend on this client. In total, you are endowed with 1.000 hours in each period. The chosen number of hours can vary from audit mandate to audit mandate. However, you have to allocate the 1.000 hours completely. Therefore, it is not possible to transfer hours to the next period.

The other participant of your group is also endowed with 1.000 hours which he can allocate freely on the 8 audit mandates. Therefore, he is making exactly the same decisions like you. Your decision and the decision of the other participant take place simultaneously. That's why you do not know the chosen number of hours of the other participant before your own decision.

For each audit mandate in each period, it will be decided separately if you or the other participant of your group acquired the audit mandate. For this purpose, for every single audit mandate it is checked who has chosen the most hours. That one who assigned the higher number of hours to an audit mandate acquires the audit mandate. If both assigned the same number of hours to an audit mandate, a random draw decides with a probability of 50% whether you or the other participant acquires the audit mandate. This also holds for the case that both participants assign an amount of 0 hours to an audit mandate.

After you and the other participant of your group decided on the allocation of hours in a period, both group members receive for each audit mandate the information whether you or the other participant acquired the audit mandate. But, you do not receive the information how many hours the other participant of your group assigned to each single audit mandate.

For each acquired audit mandate, you receive 100 lab-points. For each audit mandate you have <u>not</u> acquired, you receive 0 lab-points. Because there are 8 audit mandates in each period in total, you can earn maximally 800 lab-points in a period.

Please notice that only integer values are possible when you decide on the hours.

Furthermore, please notice that you are confronted with the same decision in each period and that the periods are independent of each other. This means that you are endowed with 1.000 hours in each period and you decide in each period again about the assignment to the 8 audit mandates.

Total payoff

Your total payoff of a period is determined as follows:

Total payoff = 100 lab-points x number of acquired audit mandates

Training periods

Before the experiment with the 15 periods starts, there is a rehearsal with 2 training periods. In these training periods, you will make the above described decisions in a two-person group. The assignment to the two-person group will be randomly at the beginning of the rehearsal. However, it will be ensured that you will not form a group with the same participant in the actual experiment with 15 periods. The goal of the training periods is that you are able to familiarize with the computer program and are therefore not relevant for your payoff.

Final information and payoff

After you have made your decisions in all 15 periods which are relevant for your payoff, *one* period is randomly chosen at the end of the experiment. The total payoff of this selected period will be converted into Euros and will be paid in cash to you after the experiment.

A1.3.3 Specific Instructions of the Type-1-Audit-Firm for the 1000-600-Treatment and 8-Clients-Treatment (specific instructions of the Type-2-Audit-Firm are presented in curly brackets, instructions for 4-Clients-Treatment are accordingly)

Your task in the experiment

In the experiment, you are taking the role of a manager of an audit firm and you are responsible for the application on the audit mandates. In each period, there are in total 8 audit mandates for which you and the other participant of your group can apply. To apply on an audit mandate, you decide how many hours your audit firm will spend on this client. In total, you are endowed with 1.000 hours in each period. The chosen number of hours can vary from audit mandate to audit mandate. However, you have to allocate the 1.000 hours completely. Therefore, it is not possible to transfer hours to the next period. {*Type-2-Audit-Firm:* In total, you are endowed with 600 hours in each period. The chosen number of hours can vary from audit mandate to audit mandate. However, you have to allocate the 600 hours completely. Therefore, it is not possible to transfer hours to the next period.}

The other participant of your group is endowed with 600 hours which he can allocate freely on the 8 audit mandates. Therefore, he is making exactly the same decisions like you, but has less hours available per period. Your decision and the decisions of the other participant take place simultaneously. That's why you do not know the chosen number of hours of the other participant before your own decision.

{*Type-2-Audit-Firm:* The other participant of your group is endowed with 1.000 hours which he can allocate freely on the 8 audit mandates. Therefore, he is making exactly the same decisions like you, but has more hours available per period. Your decision and the decisions of the other participant take place simultaneously. That's why you do not know the chosen number of hours of the other participant before your own decision.}

For each audit mandate in each period, it will be decided separately if you or the other participant of your group acquired the audit mandate. For this purpose, for every single audit mandate it is checked who has chosen the most hours. That one who assigned the higher number of hours to an audit mandate acquires the audit mandate. If both assigned the same number of hours on an audit mandate, you (with the higher available number of hours) will acquire the audit mandate. {*Type-2-Audit-Firm:* If both assigned the same number of hours to

an audit mandate, the other participant of your group (with the higher available number of hours) will acquire the audit mandate.} This also holds for the case that both participants assign an amount of 0 hours to an audit mandate.

After you and the other participants of your group decided on the allocation of hours in a period, both group members receive for each audit mandate the information whether you or the other participant acquired the audit mandate. But, you do not receive the information how many hours the other participant of your group assigned to each single audit mandate.

For each acquired audit mandate, you receive 100 lab-points. For each audit mandate you have not acquired, you receive 0 lab-points. Because there are 8 audit mandates in each period in total, you can earn maximally 800 lab-points in a period.

Please notice that only integer values are possible when you decide on the hours.

Furthermore, please notice that you are confronted with the same decision in each period and that the periods are independent of each other. This means that you are endowed with 1.000 hours {*Type-2-Audit-Firm:* 600 hours} in each period and you decide in each period again about the assignment to the 8 audit mandates.

Total payoff

Your total payoff of a period is determined as follows:

Total payoff = 100 lab-points x number of acquired audit mandates

Training periods

Before the experiment with the 15 periods starts, there is a rehearsal with 2 training periods. In these training periods, you will make the above described decisions in a two-person group. The assignment to the two-person group will be randomly at the beginning of the rehearsal. However, it will be ensured that you will not form a group with the same participant in the actual experiment with 15 periods. The goal of the training periods is that you are able to familiarize with the computer program and are therefore not relevant for your payoff.

Final information and payoff

After you have made your decisions in all 15 periods which are relevant for your payoff, *one* period is randomly chosen at the end of the experiment. The total payoff of this selected period will be converted into Euros and will be paid in cash to you after the experiment.

A1.3.4 Specific Instructions of the Type-1-Audit-Firm for the Accumulation-30-Treatment (specific instructions of the Type-2-Audit-Firm are presented in curly brackets, instructions for Accumulation-60-Treatment are accordingly)

Your task in the experiment

In the experiment, you are taking the role of a manager of an audit firm and you are responsible for the application on the audit mandates. In each period, there are in total 8 audit mandates for which you and the other participant of your group can apply. To apply on an audit mandate, you decide how many hours your audit firm will spend on this client. The chosen number of hours can vary from audit mandate to audit mandate. Therefore, it is not possible to transfer hours to the next period. How many hours are available in each period

depends on the number of acquired audit mandates. In the first period, you are endowed with 1.000 hours. {*Type-2-Audit-Firm:* In the first period, you are endowed with 600 hours.}

The other participant of your group is endowed with 600 hours which he can allocate freely on the 8 audit mandates. Therefore, he is making exactly the same decisions like you, but has less hours available in the first period. Your decision and the decisions of the other participant take place simultaneously. That's why you do not know the chosen number of hours of the other participant before your own decision.

{*Type-2-Audit-Firm:* The other participant of your group is endowed with 1.000 hours which he can allocate freely over the 8 audit mandates. Therefore, he is making exactly the same decisions like you, but has more hours available in the first period. Your decision and the decisions of the other participant take place simultaneously. That's why you do not know the chosen number of hours of the other participant before your own decision.}

For each audit mandate in each period, it will be decided separately if you or the other participant of your group acquired the audit mandate. For this purpose, for every single audit mandate it is checked who has chosen the most hours. That one who assigned the higher number of hours to an audit mandate acquires the audit mandate. If both assign the same number of hours to an audit mandate, the participant with the higher available number of hours in this period will always acquire the audit mandate. However, if the number of hours is identical for both participants in this case, a random draw decides with a probability of 50% whether you or the other participant acquires the audit mandate. This also holds for the case that both participants assign an amount of 0 hours to an audit mandate.

After you and the other participants of your group decided on the allocation of hours in a period, both group members receive for each audit mandate the information whether you or the other participant acquired the audit mandate. But, you do not receive the information how many hours the other participant of your group assigned to each single audit mandate.

For each acquired audit mandate, you receive 100 lab-points. For each audit mandate you have not acquired, you receive 0 lab-points. Because there are 8 audit mandates in each period in total, you can earn maximally 800 lab-points in a period.

Furthermore, for each acquired audit mandate in one period you receive an additional endowment of 30 hours in the next period. These hours are added to your initial endowment of hours which you had at the beginning of a period. Because there are 8 audit mandates in each period in total, you can maximally receive 240 additional hours per period. As you can receive additional hours in each period, your endowment of hours can increase from period to period. A reduction of the number of hours is not possible.

The other participant of your group also receives an additional endowment of 30 hours for each acquired audit mandate. The available amount of hours in one period of both participants will be displayed at the beginning of each period.

Please notice that only integer values are possible when you decide on the hours.

Furthermore, please notice that you are confronted with the same decision in each period and that the periods are independent of each other. This means that you decide in each period again about the assignment to the 8 audit mandates.

Total payoff

Your total payoff of a period is determined as follows:

Total payoff = 100 lab-points x number of acquired audit mandates

Please notice that your endowment of hours in one period does not affect your total payoff directly.

Amount of hours

In the first period, you are endowed with 1.000 hours in total.

{*Type-2-Audit-Firm:* In the first period, you are endowed with 600 hours in total.}

In each further period, your number of hours is determined as follows:

Number of hours in a period = number of hours in the last period + 30 x number of acquired audit mandates in the last period

Training periods

Before the experiment with the 15 periods starts, there is a rehearsal with 3 training periods. In these training periods, you will make the above described decisions in a two-person group. The assignment to the two-person group will be randomly at the beginning of the rehearsal. However, it will be ensured that you will not form a group with the same participant in the actual experiment with 15 periods. The goal of the training periods is that you are able to familiarize with the computer program and are therefore not relevant for your payoff.

Final information and payoff

After you have made your decisions in all 15 periods which are relevant for payoff, *one* period is randomly chosen at the end of the experiment. The total payoff of this selected period will be converted into Euros and will be paid in cash to you after the experiment.

A2 Revealed Strategies in the 4-Clients-Treatments

Table A1: Overview on the observed allocations and the corresponding strategy assignments in the 1000-1000-Treatment

strategy	audit mandate	audit mandate	audit mandate	audit mandate	no. of observed allocations
High-Stake-On-1-Client	≥ 150	> 0 & < 10	> 0 & < 10	> 0 & < 10	1
High-Stakes-On-2-Clients	≥ 150	≥ 150	> 0 & < 10	> 0 & < 10	12
	≥ 150	≥ 150	≥ 10 & < 150	≥ 10 & < 150	11
	≥ 150	≥ 150	≥ 10 & < 150	> 0 & < 10	1
	≥ 150	≥ 150	≥ 10 & < 150	0	1
	≥150	≥ 150	0	0	4
	500	500	0	0	16
High-Stakes-On-3-Clients	≥ 150	≥ 150	≥ 150	> 0 & < 10	14
	≥ 150	≥ 150	≥ 150	> 10 & < 150	12
	≥ 150	≥ 150	≥ 150	0	13
High-Stakes-On-4-Clients	≥ 150	≥ 150	≥ 150	≥ 150	18
	250	250	250	250	7

Table A2: Overview on observed allocations and corresponding strategy assignments of Type-1-Audit-Firms in the 1000-600-Treatment

strategy	audit mandate	audit mandate	audit mandate	audit mandate	no. of observed allocations
High-Stakes-On-2-Clients	≥ 150	≥ 150	≥ 10 & < 150	≥ 10 & < 150	1
High-Stakes-On-3-Clients	≥ 150	≥ 150	≥ 150	≥ 10 & < 150	16
	≥ 150	≥ 150	≥ 150	0	2
High-Stakes-On-4-Clients	≥ 150	≥ 150	≥ 150	≥ 150	23
	250	250	250	250	8

Table A3: Overview on observed allocations and corresponding strategy assignments of the Type-2-Audit-Firms in the 1000-600-Treatment

strategy	audit mandate	audit mandate	audit mandate	audit mandate	no. of observed allocations
High-Stakes-On-2-Clients	300	300	0	0	10
	≥ 150	≥ 150	≥ 50 & < 100	< 50	2
	≥ 150	≥ 150	≥ 25 & < 75	0	3
	≥ 150	≥ 150	≥ 50 & < 100	≥ 50 & < 100	1
	≥ 150	≥ 150	< 50	< 50	15
	≥ 150	≥ 150	0	0	13
High-Stakes-On-3-Clients	≥ 150	≥ 150	≥ 150	< 50	1
	≥ 150	≥ 150	≥ 150	0	3
High-Stakes-On-4-Clients	150	150	150	150	1
	≥ 50 & < 150	≥ 50 & < 150	≥ 50 & < 150	≥ 50 & < 150	1

A3 Revealed Strategies in the 8-Clients-Treatments

Table A4: Overview on observed allocations and corresponding strategy assignments in the 1000-1000-Treatment

strategy	audit mandate	audit mandate	audit mandate	audit mandate	audit mandate	audit mandate	audit mandate	audit mandate	no. of observed allocations
High-Stakes-On-3-Clients	300	300	300	20	20	20	20	20	3
High-Stakes-On-4-Clients	251	251	249	249	0	0	0	0	13
	≥ 100	≥ 100	≥ 100	≥ 100	< 50	< 50	< 50	≥ 50 & < 100	2
	≥ 100	≥ 100	≥ 100	≥ 100	< 50	< 50	< 50	< 50	1
High-Stakes-On-5-Clients	200	200	200	200	200	0	0	0	10
	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	< 75	< 25	< 25	2
	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	< 75	< 75	< 25	2
	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 50 & < 100	≥ 50 & < 100	≥ 25 & < 50	1
	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	< 25	< 25	< 25	36
	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 25 & < 50	≥ 25 & < 50	≥ 25 & < 50	3
	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	0	0	0	18
High-Stakes-On-6-Clients	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	< 75	< 75	3
	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	0	0	2
	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	< 50	< 50	6
High-Stakes-On-7-Clients	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	< 75	4
	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	0	1
High-Stakes-On-8-Clients	≥ 75	≥ 75	≥ 75	≥ 75	≥ 75	≥ 75	≥ 75	≥ 75	2
	125	125	125	125	125	125	125	125	3

Table A5: Overview on observed allocations and corresponding strategy assignments of Type-1-Audit-Firms in the 1000-600-Treatment

strategy	audit mandate	audit mandate	audit mandate	audit mandate	audit mandate	audit mandate	audit mandate	audit mandate	no. of observed allocations
High-Stake-On-1-Client	≥ 150	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	4
High-Stakes-On-2-Clients	≥ 150	≥ 150	≥ 100	≥ 100	≥ 100	≥ 100	≥ 50 & < 100	≥ 50 & < 100	1
	≥ 150	≥ 150	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 15 & < 50	1
	≥ 150	≥ 150	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	0	2
	≥ 150	≥ 150	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	≥ 100	2
High-Stakes-On-3-Clients	≥ 150	≥ 150	≥ 150	≥ 100	≥ 50 & < 100	≥ 50 & < 100	≥ 15 & < 50	< 15	1
	≥ 150	≥ 150	≥ 150	≥ 100	≥ 100	≥ 15 & < 50	≥ 15 & < 50	≥ 15 & < 50	1
	≥ 150	≥ 150	≥ 150	≥ 100	≥ 100	≥ 100	≥ 15 & < 50	≥ 15 & < 50	1
	≥ 150	≥ 150	≥ 150	≥ 100	≥ 100	≥ 100	≥ 100	≥ 15 & < 50	2
	≥ 150	≥ 150	≥ 150	≥ 100	≥ 100	≥ 100	≥ 100	≥ 50 & < 100	2
	≥ 150	≥ 150	≥ 150	≥ 100	≥ 100	≥ 100	≥ 100	0	1
High-Stakes-On-4-Clients	≥ 150	≥ 150	≥ 150	≥ 150	≥ 100	≥ 50 & < 100	≥ 50 & < 100	≥ 50 & < 100	1
	≥ 150	≥ 150	≥ 150	≥ 150	≥ 100	≥ 100	≥ 15 & < 50	< 15	1
	≥ 150	≥ 150	≥ 150	≥ 150	≥ 100	≥ 100	≥ 15 & < 50	0	1
	≥ 150	≥ 150	≥ 150	≥ 150	≥ 100	≥ 100	≥ 15 & < 50	≥ 15 & < 50	5
	≥ 150	≥ 150	≥ 150	≥ 150	≥ 100	≥ 100	≥ 100	< 15	1
	≥ 150	≥ 150	≥ 150	≥ 150	≥ 100	≥ 100	≥ 100	≥ 15 & < 50	1
	≥ 150	≥ 150	≥ 150	≥ 150	≥ 100	≥ 100	≥ 100	≥ 50 & < 100	3
	≥ 150	≥ 150	≥ 150	≥ 150	≥ 100	≥ 100	≥ 100	≥ 100	3
High-Stakes-On-5-Clients	≥ 150	≥ 150	≥ 150	≥ 150	≥ 150	≥ 100	≥ 50 & < 100	≥ 15 & < 50	1
	≥ 150	≥ 150	≥ 150	≥ 150	≥ 150	≥ 100	≥ 15 & < 50	≥ 15 & < 50	1
	≥ 150	≥ 150	≥ 150	≥ 150	≥ 150	≥ 100	≥ 100	≥ 15 & < 50	1
High-Stakes-On-6-Clients	≥ 150	≥ 150	≥ 150	≥ 150	≥ 150	≥ 150	≥ 50 & < 100	< 15	1
	≥ 150	≥ 150	≥ 150	≥ 150	≥ 150	≥ 150	≥ 15 & < 50	≥ 15 & < 50	2
	≥ 150	≥ 150	≥ 150	≥ 150	≥ 150	≥ 150	0	0	5
High-Stakes-On-8-Clients	≥ 100 & < 150	≥ 100 & < 150	≥ 100 & < 150	≥ 100 & < 150	≥ 100 & < 150	≥ 100 & < 150	≥ 100 & < 150	≥ 100 & < 150	6
	125	125	125	125	125	125	125	125	4

Table A6: Overview on observed allocations and corresponding strategy assignments of the Type-2-Audit-Firms in the 1000-600-Treatment

strategy	audit mandate	audit mandate	audit mandate	audit mandate	audit mandate	audit mandate	audit mandate	audit mandate	no. of observed allocations
High-Stake-On-1-Client	≥ 150	≥ 100	≥ 15 & < 50	≥ 15 & < 50	≥ 15 & < 50	≥ 15 & < 50	≥ 15 & < 50	≥ 15 & < 50	1
	≥ 150	≥ 100	≥ 100	≥ 50 & < 100	≥ 15 & < 50	≥ 15 & < 50	< 15	< 15	1
	≥ 150	≥ 100	≥ 100	≥ 100	≥ 15 & < 50	≥ 15 & < 50	< 15	< 15	1
High-Stakes-On-2-Clients	≥ 150	≥ 150	≥ 100	≥ 15 & < 50	≥ 15 & < 50	≥ 15 & < 50	≥ 15 & < 50	≥ 15 & < 50	1
High-Stakes-On-3-Clients	≥ 150	≥ 150	≥ 150	≥ 100	< 15	0	0	0	1
	≥ 150	≥ 150	≥ 150	≥ 100	< 15	< 15	< 15	< 15	1
	≥ 150	≥ 150	≥ 150	≥ 15 & < 50	< 15	< 15	< 15	< 15	1
	≥ 150	≥ 150	≥ 150	≥ 15 & < 50	0	0	0	0	1
	≥ 150	≥ 150	≥ 150	≥ 50 & < 100	0	0	0	0	2
	≥ 150	≥ 150	≥ 150	≥ 75 & < 100	< 15	< 15	< 15	< 15	1
	≥ 150	≥ 150	≥ 150	≥ 15 & < 50	≥ 15 & < 50	0	0	0	1
	≥ 150	≥ 150	≥ 150	≥ 15 & < 50	≥ 15 & < 50	≥ 15 & < 50	≥ 15 & < 50	< 15	2
	≥ 150	≥ 150	≥ 150	< 15	< 15	< 15	< 15	< 15	6
	≥ 150	≥ 150	≥ 150	0	0	0	0	0	14
	≥ 150	≥ 150	≥ 150	≥ 15 & < 50	≥ 15 & < 50	≥ 15 & < 50	≥ 15 & < 50	≥ 15 & < 50	1
High-Stakes-On-4-Clients	126	126	126	126	93	1	1	1	6
	149	149	149	149	1	1	1	1	2
	150	150	150	150	0	0	0	0	11
High-Stakes-On-6-Clients	≥ 75 & < 100	≥ 75 & < 100	≥ 75 & < 100	≥ 75 & < 100	≥ 75 & < 100	≥ 75 & < 100	< 15	< 15	1

A4 Revealed Strategies in the Accumulation Treatments

Note: As the endowment of hours (available at the beginning of a period) varies from period to period in the accumulation treatments, we use the share of endowment assigned to an audit client to categorize each allocation. For example, 20% (see first cell) indicates that 20% of the endowment of hours is assigned to this audit client.

Table A7: Overview on observed allocations and corresponding strategy assignments of Type-1-Audit-Firms in the Accumulation-30-Treatment

strategy	audit mandate	audit mandate	audit mandate	audit mandate	audit mandate	audit mandate	audit mandate	audit mandate	no. of observed allocations
High-Stakes-On-2-Clients	20%	17%	9 – 12%	9 – 12%	9 – 12%	9 – 12%	9 – 12%	9 – 12%	1
	19%	14%	9 – 12%	9 – 12%	9 – 12%	9 – 12%	9 – 12%	9 – 12%	1
	30%	20%	15%	14%	9 – 12%	9 – 12%	1%	1%	1
High-Stakes-On-3-Clients	16 – 18%	16 – 18%	16 – 18%	11 – 13%	11 – 13%	11 – 13%	11 – 13%	< 5%	2
	16%	16%	16%	10%	10%	10%	10%	10%	1
High-Stakes-On-4-Clients	25%	25%	25%	25%	0%	0%	0%	0%	4
	21 – 23%	21 – 23%	21 – 23%	21 – 23%	4%	4%	4%	4%	3
	23%	23%	23%	23%	7 – 9%	0%	0%	0%	2
	20 – 22%	20 – 22%	20 – 22%	20 – 22%	6 – 9%	6 – 9%	0%	0%	2
	19 – 21%	19 – 21%	19 – 21%	19 – 21%	6 – 10%	6 – 10%	3%	0%	2
	16%	16%	16%	16%	11%	11%	11%	3%	1
High-Stakes-On-5-Clients	20%	20%	20%	20%	20%	0%	0%	0%	9
	31%	15%	15%	15%	15%	7%	0%	0%	1
	19 – 22%	17 – 18%	14 – 15%	14 – 15%	12%	9%	5 – 7%	5 – 7%	2
	17%	17%	17%	15%	15%	10%	7%	2%	1
	20%	17%	17%	11%	11%	9%	9%	6%	1
	17%	17%	17%	17%	17%	12%	1%	1%	1
	19%	19%	19%	19%	19%	2%	2%	2%	1
High-Stakes-On-6-Clients	17 – 19%	17 – 19%	17 – 19%	16 – 19%	12 – 17%	12 – 17%	0%	0%	6
	14 – 18%	14 – 17%	12 – 15%	12 – 15%	12 – 15%	11 – 15%	6 – 9%	6 – 9%	10
	15 – 25%	15 – 21%	13 – 17%	13 – 15%	10 – 15%	10 – 15%	6 – 9%	2 – 4%	8
	15 – 18%	15 – 18%	15 – 18%	15 – 18%	13 – 17%	11 – 16%	1 – 4%	1 – 4%	7
	18%	18%	18%	14%	13%	12%	7%	0%	1
	16%	16%	16%	16%	16%	16%	1%	0%	1
High-Stakes-On-7-Clients	14 – 19%	14 – 19%	14 – 19%	11 – 15%	11 – 15%	11 – 15%	11 – 14%	0%	11
	14 – 18%	13 – 16%	12 – 15%	12 – 15%	11 – 13%	10 – 13%	10 – 12%	6 – 9%	12
	14 – 20%	13 – 18%	12 – 17%	12 – 15%	10 – 14%	10 – 14%	10 – 14%	1 – 5%	24

High-Stakes-On-8-Clients	13%	13%	13%	13%	13%	13%	13%	13%	6
	12 – 13%	12 – 13%	12 – 13%	12 – 13%	12 – 13%	12 – 13%	12 – 13%	12 – 13%	25
	13 – 15%	12 – 14%	12 – 14%	12 – 13%	12 – 13%	11 – 13%	11 – 13%	10 – 12%	13
	14 – 15%	14 – 15%	14 – 15%	14 – 15%	10 – 11%	10 – 11%	10 – 11%	10 – 11%	2
	17%	14%	11 – 12%	11 – 12%	11 – 12%	11%	11%	10 – 11%	2

Table A8: Overview on observed allocations and corresponding strategy assignments of the Type-2-Audit-Firms in the Accumulation-30-Treatment

strategy	**audit mandate**	**audit mandate**	**audit mandate**	**audit mandate**	**audit mandate**	**audit mandate**	**audit mandate**	**audit mandate**	**no. of observed allocations**
High-Stakes-On-1-Client	38%	13%	13%	13%	13%	13%	0%	0%	1
High-Stakes-On-2-Clients	50%	50%	0%	0%	0%	0%	0%	0%	12
	45 – 48%	45 – 48%	1 – 3%	1 – 3%	1%	1%	1%	1%	4
	43%	43%	14%	0%	0%	0%	0%	0%	1
	49%	49%	2%	0%	0%	0%	0%	0%	1
	35%	35%	20%	3%	3%	2%	2%	0%	1
High-Stakes-On-3-Clients	33%	33%	33%	0%	0%	0%	0%	0%	38
	32 – 34%	32 – 33%	32 – 33%	1 – 3%	0%	0%	0%	0%	10
	32 – 39%	28 – 33%	27 – 32%	1 – 4%	1 – 2%	0%	0%	0%	4
	34 – 42%	31 – 35%	25 – 33%	0%	0%	0%	0%	0%	11
	26 – 32%	26 – 32%	26 – 32%	1 – 6%	1 – 4%	1 – 4%	1 – 4%	1 – 4%	3
	26 – 33%	17 – 33%	15 – 32%	1 – 13%	1 – 13%	1 – 12%	1 – 5%	0%	4
	29 – 31%	29 – 31%	26 – 31%	7 – 15%	0%	0%	0%	0%	3
	28%	28%	28%	13%	2%	2%	0%	0%	1
	28%	28%	28%	9%	7%	0%	0%	0%	1
	50%	25%	25%	0%	0%	0%	0%	0%	1
High-Stakes-On-4-Clients	25%	25%	25%	25%	0%	0%	0%	0%	23
	25 – 29%	24 – 28%	22 – 25%	22 – 25%	0%	0%	0%	0%	13
	24 – 28%	24 – 25%	23 – 25%	21 – 25%	1 – 5%	0%	0%	0%	5
	27 – 28%	27 – 28%	27 – 28%	16 – 19%	0%	0%	0%	0%	3
	21 – 22%	21 – 22%	21 – 22%	21 – 22%	13 – 15%	0%	0%	0%	2
High-Stakes-On-5-Clients	20%	20%	20%	20%	20%	0%	0%	0%	11
	21%	20%	20%	20%	19%	0%	0%	0%	6
High-Stakes-On-6-Clients	17%	17%	17%	17%	16%	16%	0%	0%	4
	17%	17%	17%	17%	17%	16%	0%	0%	1
	17%	17%	17%	17%	17%	17%	0%	0%	1
High-Stakes-On-7-Clients	15%	14%	14%	14%	14%	14%	14%	0%	1

Table A9: Overview on observed allocations and corresponding strategy assignments of Type-1-Audit-Firms in the Accumulation-60-Treatment

strategy	audit mandate	audit mandate	audit mandate	audit mandate	audit mandate	audit mandate	audit mandate	audit mandate	no. of observed allocations
High-Stakes-On-2-Clients	35%	35%	10%	5%	5%	5%	5%	0%	1
High-Stakes-On-3-Clients	25 – 37%	24 – 25%	15 – 25%	6 – 7%	6 – 7%	5 – 7%	3%	2 – 3%	2
	21 – 24%	21 – 24%	15 – 16%	9 – 10%	9%	6 – 9%	6 – 9%	5%	2
High-Stakes-On-4-Clients	17%	17%	16 – 17%	16 – 17%	8 – 9%	8%	8%	8%	3
	21 – 24%	17 – 24%	13 – 17%	11 – 17%	8 – 10%	8 – 10%	4 – 9%	4 – 6%	4
	27 – 32%	22 – 25%	15 – 18%	12 – 17%	7%	4%	1 – 4%	1 – 3%	2
	24%	24%	18%	17%	7%	6%	5%	0%	1
High-Stakes-On-5-Clients	14 – 15%	14 – 15%	14 – 15%	13 – 15%	12 – 15%	8 – 10%	8 – 10%	6 – 10%	7
	18 – 24%	16 – 24%	12 – 19%	11 – 19%	10 – 16%	4 – 9%	2 – 8%	1 – 6%	10
	20%	20%	20%	20%	20%	0%	0%	0%	2
	19 – 22%	19 – 21%	19%	18 – 19%	17 – 19%	3%	1 – 2%	0%	2
	20%	20%	20%	20%	18%	1%	1%	1%	1
	19%	19%	19%	19%	19%	3%	0%	0%	1
High-Stakes-On-6-Clients	14 – 18%	14 – 18%	13 – 15%	13 – 15%	13 – 15%	13 – 14%	7 – 9%	5 – 8%	6
	15 – 24%	15 – 20%	15 – 17%	12 – 17%	12 – 17%	9 – 16%	1 – 4%	1 – 4%	15
	15 – 19%	14 – 18%	14 – 16%	13 – 15%	12 – 15%	10 – 15%	6 – 10%	1 – 4%	5
	18 – 22%	18 – 22%	13 – 16%	13%	12 – 13%	12 – 13%	6 – 10%	0%	2
	17%	17%	17%	17%	17%	17%	0%	0%	1
High-Stakes-On-7-Clients	14 – 18%	14 – 16%	14 – 15%	13 – 15%	13 – 14%	12 – 14%	12 – 14%	0%	9
	13 – 15%	13 – 15%	13 – 15%	13 – 15%	13 – 15%	11 – 14%	11 – 14%	5 – 9%	6
	14 – 19%	14 – 17%	14 – 16%	13 – 14%	13 – 14%	13 – 14%	9 – 14%	1 – 4%	7
	32%	10%	10%	10%	10%	10%	10%	6%	1
High-Stakes-On-8-Clients	13%	13%	13%	13%	13%	13%	13%	13%	14
	13%	13%	13%	13%	12%	12%	12%	12%	16
	13%	13%	13%	13%	13%	12%	12%	12%	8
	13%	13%	13%	13%	13%	13%	12%	12%	8
	13%	13%	13%	12%	12%	12%	12%	12%	5
	13%	13%	13%	13%	13%	13%	13%	12%	4
	13%	12%	12%	12%	12%	12%	12%	12%	5
	16 – 22%	11 – 22%	9 – 14%	9 – 13%	9 – 12%	8 – 12%	8 – 12%	8 – 12%	13
	13 – 16%	12 – 16%	11 – 16%	11 – 15%	10 – 13%	10 – 13%	10 – 12%	9 – 12%	29
	13%	13%	12%	12%	12%	12%	12%	12%	2

Table A10: Overview on observed allocations and corresponding strategy assignments of the Type-2-Audit-Firms in the Accumulation-60-Treatment

strategy	audit mandate	audit mandate	audit mandate	audit mandate	audit mandate	audit mandate	audit mandate	audit mandate	no. of observed allocations
High-Stakes-On-1-Client	100%	0%	0%	0%	0%	0%	0%	0%	9
	42%	18%	17%	10%	8%	6%	0%	0%	1
	21%	15%	14%	13%	12%	10%	9%	6%	1
High-Stakes-On-2-Clients	50%	50%	0%	0%	0%	0%	0%	0%	16
	51 – 61%	39 – 48%	0%	0%	0%	0%	0%	0%	11
	40 – 57%	38 – 48%	4 – 20%	0%	0%	0%	0%	0%	9
	46 – 48%	44 – 48%	2 – 5%	2 – 5%	0%	0%	0%	0%	2
	27 – 46%	25 – 43%	5 – 13%	3 – 13%	3 – 13%	3 – 10%	0%	0%	3
	23 – 50%	23 – 47%	1 – 14%	1 – 11%	1 – 9%	1 – 8%	1 – 6%	1 – 6%	6
	36 – 39%	33 – 39%	9 – 14%	8 – 9%	4 – 7%	0%	0%	0%	2
	39 – 50%	34 – 44%	3 – 10%	1 – 8%	1 – 5%	1 – 2%	1 – 2%	0%	2
High-Stakes-On-3-Clients	33%	33%	33%	0%	0%	0%	0%	0%	38
	36 – 42%	31 – 37%	23 – 29%	0%	0%	0%	0%	0%	14
	29 – 34%	29 – 31%	29 – 31%	5 – 13%	0%	0%	0%	0%	6
	31 – 45%	28 – 36%	23 – 31%	1 – 12%	1 – 9%	0%	0%	0%	4
	32 – 35%	28 – 32%	29 – 32%	1 – 10%	1 – 3%	1%	1%	1%	3
	33%	22 – 33%	17 – 33%	1 – 12%	1 – 8%	1 – 8%	0%	0%	2
	33%	33%	33%	1%	0%	0%	0%	0%	1
	35%	33%	32%	0%	0%	0%	0%	0%	1
	33%	33%	21%	4%	4%	4%	1%	0%	1
High-Stakes-On-4-Clients	25%	25%	25%	25%	0%	0%	0%	0%	33
	26 – 40%	21 – 28%	20 – 26%	18 – 23%	0%	0%	0%	0%	10
	22 – 26%	17 – 19%	17 – 18%	13 – 15%	9 – 12%	8 – 10%	7 – 8%	0%	3
	22 – 28%	22 – 28%	22 – 28%	15 – 25%	1 – 14%	0%	0%	0%	6
	21 – 25%	21 – 25%	21 – 25%	17 – 21%	1 – 12%	1 – 3%	1 – 3%	1 – 2%	3
	22%	22%	18%	18%	10%	10%	0%	0%	1
High-Stakes-On-5-Clients	20 – 21%	20 – 21%	19 – 21%	19 – 21%	18 – 21%	0%	0%	0%	5
	19%	19%	19%	19%	19%	4 $	1%	0%	1
High-Stakes-On-6-Clients	22%	21%	15%	15%	15%	14%	0%	0%	1

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