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Journal of Business Economics

Provided in Cooperation with:
Springer Nature

Suggested Citation: Blaufus, Kay; Reineke, Jakob; Trenn, Ilko (2022) : Perceived tax audit aggressiveness, tax control frameworks and tax planning: an empirical analysis, Journal of Business Economics, ISSN 1861-8928, Springer, Berlin, Heidelberg, Vol. 93, Iss. 3, pp. 509-557, https://doi.org/10.1007/s11573-022-01116-6

This Version is available at:
https://hdl.handle.net/10419/312206

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Journal of Business Economics (2023) 93:509–557
https://doi.org/10.1007/s11573-022-01116-6

ORIGINAL PAPER

Perceived tax audit aggressiveness, tax control frameworks and tax planning: an empirical analysis

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Accepted: 26 September 2022 / Published online: 13 December 2022
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Abstract

This paper examines whether a perceived increase in tax audit aggressiveness is associated with lower tax planning effort and a higher quality of internal tax control frameworks. Using survey data on corporate tax functions from approximately 200 firms from different countries, contrary to expectations, we find that neither internal nor external resources devoted to tax planning are lower for firms that perceive an increase in tax audit aggressiveness. Nevertheless, for these firms, we find a positive association with the quality of their tax control framework and their investments in the reputation management and communication skills of their tax department staff. In line with this, we find that an increase in perceived audit aggressiveness is directly (indirectly) associated with an increase in resources allocated to the tax function "controversy and audit defense" ("risk management and governance"). In addition, our results show a positive relationship between the quality of the tax control framework and the need for comprehensive improvements in human capital and internal processes, suggesting that the tax control framework affects the firms' perceptions of their tax capabilities and drives organizational changes. Overall, these findings are in line with the rationale that an increase in audit aggressiveness changes the costs of compliance errors such that firms improve the quality of their tax control framework to reduce future errors. In contrast, it remains unclear whether tax audit aggressiveness actually changes tax planning behavior, as we find no negative association with the firms' investment in tax planning.

Keywords Tax avoidance · Tax control framework · Tax enforcement · Tax compliance management

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JEL Classification M40 · M41 · M48 · H26

1 Introduction

We study whether an increase in perceived tax audit aggressiveness is associated with less tax planning effort and a higher quality of internal tax control frameworks (TCFs). The financial crisis in 2008/2009 and high deficits in governments' budgets led to public pressure to combat multinational firms' aggressive tax planning. In addition to facing legal measures implemented in many countries within the Base Erosion and Profit Shifting (BEPS) project, firms increasingly report more aggressive enforcement in tax audits (e.g., Allen and Overy 2017; KPMG 2016). In particular, firms report more frequent and extensive requests for information, more audit queries, more aggressiveness in raising assessments, longer lasting audits, a higher difficulty in reaching resolutions with tax authorities, and a harder negotiating line taken by tax authorities in recent years.

Because firms find their optimal level of tax planning by weighing the direct benefits of tax planning against the associated nontax costs, such as expected penalties or interest payments in the event that a tax planning strategy is not accepted by the tax auditor (Kim et al. 2019), we hypothesize that an increase in perceived audit aggressiveness would reduce the firms' investment in tax planning. The simple rationale underlying this prediction is that the higher nontax costs due to an increase in tax auditors' aggressiveness reduce the return to tax planning such that some tax planning investments are no longer worthwhile.

In addition, stricter tax enforcement increases the expected costs of making errors (expected civil penalties or additional interest payments) due to the higher detection probability. Thus, firms have an increasing incentive to improve their internal TCF design to reduce the risk of committing tax compliance errors in advance. Furthermore, audit aggressiveness may result in discussions of whether a detected error is made intentionally or unintentionally. This also increases the firms' incentive to improve the quality of their internal TCF because a high-quality TCF might be used as proof that the errors discovered were not caused by negligence and were not intentional. In sum, we hypothesize that an increase in perceived audit aggressiveness is associated with an increase in the quality of the firms' TCF.

To test these hypotheses, we exploit survey data on corporate tax functions from approximately 200 large firms from different countries. The detailed data allow us to construct sophisticated measures of the change in perceived tax audit aggressiveness, the resources that firms allocate to tax planning, and the quality of the firms' TCF.

Contrary to our expectation, we find that neither internal nor external resources devoted to tax planning are significantly lower for firms that perceive an increase in tax audit aggressiveness. The two most reasonable explanations for this result are that (1) tax auditors often only detect compliance errors rather than tax avoidance schemes, which would be in line with the results of Christian (1994), who report that many audits in the United States do not result in a penalty for negligence or fraud because tax auditors report that the tax audit adjustment on

business income is only due to inaccurate accounting procedures or lack of substantiation, and (2) that firms switch their tax planning strategies without significantly adjusting their level of tax planning investments, for example, by choosing a less aggressive transfer price to reduce the risk that the tax auditor will require adjustments.

Moreover, in line with our expectations, we observe that an increase in perceived audit aggressiveness is significantly associated with an increase in the quality of the firms' TCF. Accordingly, we find that an increase in perceived audit aggressiveness is directly (indirectly) associated with an increase in the percentage of full-time employees (FTEs) that firms allocate to the tax function "controversy and audit defense" ("risk management and governance"). In addition, we find that a rise in perceived audit aggressiveness is associated with more planned investments in the reputation management and communication skills of the tax department staff. This finding suggests that firms have an increased need to avoid the negative reputational consequences of being declared "noncompliant" and thus focus on improving tax certainty when faced with a rise in audit aggressiveness.

This study contributes to prior research as follows: first, many studies using data on tax liabilities or effective tax rates report that firms faced with stricter enforcement by revenue agencies engage less in tax avoidance (Almunia and Lopez-Rodriguez 2018; Hoopes et al. 2012; Kubick et al. 2016; Li et al. 2019). However, a limitation of these studies is that they are unable to identify the behavioral channel through which stricter enforcement affects firm behavior, as both the firm and the tax audit largely remain a "black box". The focus on observable data such as the change in effective tax rates or in tax liability permits limited insights into the firms' actual tax activities (Feller and Schanz 2017). Therefore, we complement these studies with survey data that provide detailed information on the organization of tax functions. Our results suggest that the observed increase in effective tax rates after a tax audit may not correspond to an actual reduction in the firms' tax planning investments. Thus, it remains unclear to what extent tax audit aggressiveness in fact changes tax planning behavior or whether the observed higher effective tax rates after tax audits (at least partly) only reflect the correction of detected compliance errors.

Second, the behavior of tax enforcement is also very difficult to observe (Hanlon et al. 2014). Most prior studies do not obtain a glimpse inside this "black box" (Finley and Stekelberg 2020) but rely on simplified proxies such as the variation in audit probability. However, what should matter for firm behavior is not only audit probability but also the perceived effectiveness of tax monitoring activities. Therefore, we contribute to previous accounting research by studying how firms perceive actual auditor behavior and how this perception is associated with their own behavior, which is particularly worthwhile for large firms, because there is often no variation in the audit probability, as it is often already 100%.

Third, to the best of our knowledge, this study is the first to investigate the association between enforcement behavior and the quality of the firms' tax control frameworks. This study complements the research on the effects of internal information environments on firms' tax behavior (Gallemore and Labro 2015) by analyzing potential drivers of the quality of these environments.

Fourth, we test the effects of a perceived change in audit aggressiveness on the activities of tax departments. We do not find an association with the absolute number of FTEs. However, we do find a positive association with the percentage of the staff which is assigned to controversy and defense tasks as well as risk management tasks. This indicates, that a stricter enforcement increases the need to reallocate resources within the tax department which might impact firms' behavior in the future.

The paper is organized into six sections. Following this introduction, Sect. 2 presents the theoretical background and hypothesis development. In Sect. 3, we present the sample selection, estimation method, and variable measurement. The results are described in Sect. 4. Section 5 includes additional analyses and robustness checks. The last section discusses the study's results and implications for future research.

2 Theoretical background and hypothesis development

2.1 The effect of tax audit aggressiveness on firms' tax planning effort

The theoretical implications of an increase in tax enforcement seem to be straightforward: when firms determine their optimal amount of tax planning investments such that the marginal benefit equals the marginal cost, then increasing the expected costs of nonaccepted tax planning strategies (due to an increase in audit aggressiveness) should reduce the level of tax planning investments (Allingham and Sandmo 1972; Kim et al. 2019).[1] In other words, we assume that tax planning investments and the output of tax planning (expected tax savings) are positively related because rationally acting firms only conduct profitable investments. This rationale is in line with previous research on the return of investments to tax planning (Blaufus et al. 2017; Mills et al. 1998). In this vein, the *marginal* tax planning investment should provide a net present value amounting to zero, and by increasing the detection costs of tax planning, the net present value of the former *marginal* investment becomes negative such that firms reduce their investment level to a new level. Nonetheless, tax audits could also provoke an increasing need for tax planning effort for firms who use tax planning opportunities for which the marginal benefit exceeds the marginal costs ("corner solution"). For example, if the tax burden is close to zero (as for some US companies in Europe) an increasing audit aggressiveness might result in firms searching for more complex tax planning strategies which requires more tax planning effort.

Prior empirical evidence mainly seems to support the prediction that firms reduce their tax planning activities in light of an increase in tax enforcement (Almunia and Lopez-Rodriguez 2018; Hoopes et al. 2012; Kubick et al. 2016; Li et al. 2019) by

[1] Clearly legal tax planning should not be affected, as there is no risk of nonacceptance by tax authorities, even if it might be considered aggressive by the public. In line with this, prior research shows that firms with comparatively low tax burdens are also able to keep them stable over a longer period of time (Dyreng et al. 2008; Guenther et al. 2017). In general, a change in tax enforcement may also change firms' earnings management in their financial statements (Blaufus et al. 2022a). However, since we do not have financial statement data, we cannot test this prediction in the current study.

showing that effective tax rates or tax liabilities increase after tax audits.[2] However, up to now most studies only refer to an *output* variable with regard to tax avoidance without considering the association with the *input* variable, i.e., tax planning investments. Therefore, the empirical question whether firms reduce their level of tax planning investments when facing higher audit aggressiveness has yet to be answered.

If a firm's effective tax rate increases after a tax audit, it could be due to a reduction in tax planning; however, it could also be due to a simple reduction in errors that occurred in the application of complex tax regulations and were discovered during the tax audit.[3] Keeping in mind that tax codes are very complex and that large businesses are faced with many different types of events, transactions, arrangements and activities, which all influence tax liability (Hasseldine and Morris 2013), it is very likely that tax returns contain many different types of errors (e.g., human errors, misinterpretation of tax laws, the absence of necessary knowhow or simply errors outside the tax department, such as accounting errors). For example, for individual taxpayers, Advani et al. (2021) show that a substantial portion of all observed tax reporting violations may be attributed to unintentional errors due to the complexity of tax law, and they find that the positive long-term effects of tax audits mostly come from correcting errors made by taxpayers. This attribution is not valid for larger firms because of the access to tax professionals. However, Erard (1997) finds that while both intentional and unintentional errors are less likely if taxpayers submit paid-prepared returns, there are still unintentional errors in these returns, and the size of these errors tends to be even larger. Additionally, Kosonen and Ropponen (2015) find that firms regularly make unintentional errors with regard to law changes, and Christian (1994) finds that tax auditors report that the tax audit adjustment on business income is often only due to inaccurate accounting procedures or the lack of substantiation. This finding indicates that for larger firms, the access and usage of tax professionals is outweighed by increased complexity through the fast-evolving law (e.g., legal changes, court rulings, developments in opinions of the tax authority or the tax auditors) and the large amounts of transactions, arrangements and events. As shown by Graham et al. (2017) and Zwick (2020), corporate tax complexity can frequently result in suboptimal corporate tax behavior. Thus, it is unclear whether the previously reported positive effects of tax enforcement on tax compliance are fully due to less tax planning.

Moreover, in contrast to the abovementioned standard economic rationale that an increase in nontax costs, such as the costs of nonaccepted tax planning strategies,

[2] There are also exceptions. DeBacker et al. (2015b) demonstrate that firms gradually increase their tax aggressiveness for a few years following an audit; Ayers et al. (2019) show that increasing the audit probability to 100% does not have a higher deterrence effect; and Finley (2019) finds that firms with relatively favorable (unfavorable) tax settlements subsequently increase their tax avoidance (do not change their behavior).

[3] A higher revelation of unintentional errors might impact the ETR without changing the firms' actual engagement in tax planning. For example, if a firm always treats non-deductible expenses as deductible for tax purposes, then detection by tax authorities will ceteris paribus increase the ETR (and therefore decrease the measured tax avoidance). Thus, the results provide little insight into the tax planning effort and strategies of firms.

must lead to a reduction in tax planning investments, it is also reasonable to assume that firms might only reduce the aggressiveness of their tax planning strategy without changing the level of investments, e.g., by adjusting the amount of a specific transfer price to reduce the risk of adjustments by the auditor.

In sum, the question of the actual impact of stricter tax enforcement within firms is still an open empirical question. On the one hand, the higher expected penalties for tax planning may result in reduced tax planning. On the other hand, firms might reduce the risk of their strategies without changing the level of their tax avoidance investments or not change their tax planning behavior at all either because their tax planning strategies are clearly legal or tax audits mainly concern the detection of unintentional errors. In line with the first-mentioned argument, we test the following hypothesis:

H1 An increase in perceived audit aggressiveness reduces firms' tax planning effort.

2.2 The effect of audit aggressiveness on the quality of tax control frameworks

In this section, we develop our hypothesis on the effect of audit aggressiveness on firms' TCF. Firms try to address and control their tax risk by developing TCFs[4] (Wunder 2009). A TCF consists of processes and internal controls to assure the accuracy and completeness of tax returns and disclosures by a firm (OECD 2016). To the best of our knowledge, there is no research on this subject up to date.

Tax audits impose additional administrative costs (time to answer audit inquiries including reviews of past transactions, fees for tax advice) as well as direct costs in the form of underpaid taxes and penalties through audit adjustments on firms (Belnap et al. 2020). If tax audits last longer, revenue agencies request more frequent and comprehensive information, this increases firms' administrative costs of audits. Moreover, more aggressiveness in raising assessments, a higher difficulty of reaching a resolution with tax authorities, and tax authorities that take a harder line in negotiations increases the expected direct cost of audits[5] as well as the expected additional tax controversy costs, e.g., costs for appeal proceedings, costs for legal proceedings, and additional costs for external advisors. More aggressive tax audits can also lead to increasing controversy as to whether a detected error was intentional (and thus considered tax evasion) or accidental; such controversy increases the risk of not only monetary penalties but also reputational damages.

We predict that a change in tax audit aggressiveness increases the incentive for firms to improve their internal TCF. This hypothesis is based on the following reasons. First, an increase in audit aggressiveness leads to an (expected) increase in the revelation of errors such that the expected costs of errors increase due to back taxes,

[4] Wunder (2009) uses the term "tax risk management", whereas the OECD (2016) uses the term "tax control frameworks". We understand both terms as synonyms.

[5] Blaufus et al. (2022b) demonstrate that a tough (competitive) auditor negotiation strategy is associated with significantly higher additional assessed taxes.

interest and/or penalties assessed on detected errors. Thus, firms have an increasing incentive to avoid errors. Second, firms might view a high-quality TCF as legal protection against an accusation of tax fraud for the firm itself, if the taxpayer amends incorrect or incomplete tax returns or if a noncompliance case is discovered in a tax audit.[6] Firms can thus reduce the risk of not only criminal penalties but also reputational damage from being publicly declared tax evaders (Blaufus et al. 2019). Third, the firms' approach to tax risks and controls is an important element of the tax authorities' assessment of firms (OECD 2013), and a high-quality TCF should reduce the revenue agencies' perceived firm risk, which in turn might reduce the audit length and corresponding administrative tax audit costs for firms. Fourth, a well-working TCF ensures that the firms' documentation is acceptable to tax authorities, e.g., transfer price documentation or documentation related to R&D tax credits (Gallemore and Labro 2015). This helps firms defend their tax planning strategies.

However, a high-quality TCF is costly to implement and run. Moreover, firms have to consider that their own TCF might detect more errors than would be detected by a tax audit, which would ultimately increase the firms' tax burden. Therefore, firms need to weigh the expected benefits of a better TCF against the associated costs of implementing and operating a control system. The empirical question arises regarding whether companies improve the quality of their TCF when they perceive that tax audits will become more aggressive. Therefore, we test the following hypothesis:

H2 An increase in perceived audit aggressiveness increases the quality of the firms' TCF.

3 Sample selection, variable measurement, descriptive statistics, and estimation strategy

3.1 Sample selection

We use confidential survey data on 294 firms from 36 different countries worldwide. The data were collected by a Big 4 company between May and November 2016 (KPMG 2016). Survey respondents were employees in charge of their firms' tax policy and operations (KPMG 2016). The data were collected using an online questionnaire, and all answers were anonymous. The survey contained 69 questions (see the extract in "Appendix 2"). The survey started with general questions concerning firm characteristics, followed by questions regarding the structure and responsibilities of the tax department and finally questions on tax processes, governance and experience with the behavior of tax authorities.

[6] For example, the German Federal Ministry of Finance stated in an official decree that a TCF could serve as an indication against tax evasion (Federal Ministry of Finance 2016, p. 3).

Considering our objective to identify the effect of a change in audit aggressiveness on firms' tax planning effort, we remove taxpayers with missing information on our variables of interest: tax planning effort (42 observations) and audit aggressiveness (15 observations). Moreover, we remove firms with insufficient country controls (12 observations).[7] Furthermore, we remove firms that either did not properly fill out the form[8] or obviously misunderstood the question[9] (21 observations) or provided unrealistic values[10] (3 observations). Thus, our final sample includes 201 firms from 25 different countries.[11] However, with respect to information regarding resources used for external tax service providers, our sample is further reduced to 127 firms.

3.2 Variable measurement and descriptive statistics

3.2.1 Tax audit aggressiveness

We develop a measure for the perceived change in tax audit aggressiveness based on the following 11 questions displayed in Table 1.

As expected, the eleven variables are positively correlated. To obtain a measure of the perceived change in tax audit aggressiveness, we conduct a confirmatory factor analysis. We assume that the answers of the respondents all depend on a latent variable: the perceived change in behavior of tax authorities. The firms answered mostly binary (yes/no) questions concerning changes in the perceived behavior of tax authorities. The Cronbach's alpha for the eleven items is 0.7722 and therefore above the critical value of 0.7 (Brazel and Agoglia 2007; Castaño et al. 2016; Henri 2010; Nunnally and Bernstein 1994), which suggests one underlying latent variable. Thus, we use item response theory,[12] according to which a latent variable can be fitted to discrete responses (De Jong et al. 2008; Glockner-Rist and Hoijtink

[7] This concerns the following countries: China, Hungary, Mauritius, Nigeria, Russia, United Arab Emirates, and Uruguay.

[8] Nine firms filled in the same number (for example, 1) for the allocation of resources, and one firm always filled in the number of the question.

[9] Eleven firms did not fill in the number of FTEs but rather indicated the percentage of the activity so that the total added up to 100 (either in the tax department or together with the resources in the nontax department).

[10] In these cases, the total FTE values exceeded 10 times the median for the different groups of total employees of the firm. Firms reported 128 and 350 FTEs in the tax department out of 1,000–10,000 total employees or 318 full-time employees in the tax department of a total of more than 50,000 employees.

[11] Country (observations): Argentina (1); Australia (22); Austria (11); Canada (31); Colombia (1); Denmark (13); Finland (5); France (5); Germany (3); Ireland (3); Italy (5); Japan (15); Netherlands (6); New Zealand (1); Norway (1); Peru (2); Portugal (3); Singapore (2); South Africa (15); Spain (10); Sweden (3); Switzerland (8); Turkey (3); United Kingdom (24); United States of America (8).

[12] We also conducted an explanatory factor analysis and found a single factor with an Eigenvalue of 2.79582, an explained proportion of 89,84% and a Kaiser-Meyer-Okin measure of sampling adequacy of 0.7936. This suggests again one underlying latent trait that presents "Audit Aggressiveness". However, due to the binary data, the factor analysis is not appropriate; therefore, we fitted an item response model to measure the underlying factor "Audit Aggressiveness".

Table 1 Measurement of a perceived change in tax audit aggressiveness

Question	Possible answers	(1) N	(2) Mean	(3) SD
Over the past 3 years, have you noticed an increase in the following activities of the tax authorities you deal with?				
(1) More frequent requests for information	Yes = 1/No = 0	201	0.701	0.459
(2) More extensive requests for information	Yes = 1/No = 0	201	0.577	0.495
(3) More audit queries	Yes = 1/No = 0	201	0.527	0.500
(4) More use of formal powers to obtain information	Yes = 1/No = 0	201	0.154	0.362
(5) More aggressiveness in raising assessments	Yes = 1/No = 0	201	0.468	0.500
(6) More frequent application of penalties	Yes = 1/No = 0	201	0.264	0.442
(7) More frequent sustention of penalties raised	Yes = 1/No = 0	201	0.075	0.263
(8) Compared to 3 years ago, are audits undertaken by the tax authorities you deal with taking longer to conclude?	No/About the same = 0 Yes = 1	201	0.468	0.500
(9) Is the level of difficulty in reaching a resolution with the tax authorities you deal with increasing?	No/About the same = 0 Yes = 1	201	0.577	0.495
(10) In negotiations/settlement proceedings during the last 3 years, are tax authorities taking a harder line, e.g., not "splitting the difference" in marginal cases or expecting taxpayers to concede substantially all of the tax in dispute?	No/About the same = 0 Yes = 1	201	0.498	0.501
(11) Compared to 3 years ago, are tax authorities you deal with more prepared to take disputes to litigation rather than to seek a negotiated settlement?	No/About the same = 0 Yes = 1	201	0.299	0.459

2003; Meade and Lautenschlager 2004; Raykov and Calantone 2014).[13] The mean of the perceived change in audit aggressiveness (AUDIT_AGG) is 0.0015 (Table 2). The mean value of AUDIT_AGG for the lowest (highest) quartile of observations amounts to − 1.1325 (1.1462).

3.2.2 Tax planning effort

The survey participants answered detailed questions concerning the responsibilities and duties of the central tax department. In particular, they were asked how the tax department resources were allocated by FTEs to the following functions: (1) accounting for income taxes, (2) business unit support and consulting, (3) controversy and audit defense, (4) day-to-day processing of intercompany transactions, (5) merger, acquisition and restructuring activities, (6) research and planning (excluding transfer pricing), (7) risk management and governance, Sarbanes Oxley and similar, (8) tax department administration, (9) tax returns/compliance, (10) tax technology, (11) training for tax personnel, (12) transaction taxes (VAT, indirect tax, GST, etc.), and (13) transfer pricing. To measure the tax planning effort of firms, we combine the internal resources in the tax department for tax planning by FTEs, which are listed as follows: merger, acquisition and restructuring activities; research and planning, excluding transfer pricing; and transfer pricing. On average, a firm has 1.73 FTEs in the internal tax department dealing with tax planning activities. This number reflects an average of 22.98% (TPE_REL_INT) of the total 8.86 FTEs working in the tax department (Table 2).

Furthermore, to obtain the tax planning effort for external advisors, we use a question in which respondents indicated the estimated percentage performed by the tax department and by an external tax service provider for each of the aforementioned tax activities,[14] meaning that firms state the percentage of tax planning

[13] Item response models have been used previously in management research (Carroll et al. 2016) and especially in marketing research (e.g., De Jong et al. 2008; Raykov and Calantone 2014). We use item response theory to relate all observed answers concerning the behavior of tax authorities to the underlying latent trait audit aggressiveness. We use a two-parameter logistic model, where the first parameter (discrimination) measures the strength of the effect of the item on the latent trait and the second parameter (difficulty) measures the point where a respondent with a given latent trait has an equal probability of choosing any of the answers. We compare the one-parameter logistic (1PL) model and the two-parameter logistic model (2PL) by performing a likelihood-ratio test, which compares the goodness of fit of the 1PL and the 2PL models. The LR test clearly rejects the 1PL model in favor of the 2PL model. In our model, the difficulty parameter can be interpreted as the likelihood of perceiving an increase in the abovementioned activities for a given level of perceived audit aggressiveness. Therefore, items with a negative difficulty level are more likely to be answered yes, even with low levels of perceived aggressiveness. In contrast, items with a positive difficulty level are likely to be answered yes only with a high level of perceived aggressiveness. The discrimination is conceptually similar to a factor loading in confirmatory factor analysis (De Jong et al. 2008). It represents the relationship between the perceived audit aggressiveness and the observed responses. The results of the item response model are displayed in Table 12 in "Appendix 1".

[14] The participants of the survey also answered a question concerning the number of FTEs at nontax department headquarters location (see "Appendix 2"). However, we assume that the actual tax planning activities take place in the tax department itself or by external providers even if outside the tax department many employees might still be engaged with transactions, M&A, etc.

activities that are made internally and by external tax advisors. This process enables us to measure the expenses for external tax planning advice. To measure internal and external tax planning investments with the same unit, we converted the percentage of external tax planning expenditures into FTEs. The mean value of the tax planning effort for external advisors is 0.85 FTE, which is on average 36.71% (TPE_REL_EXT) of the total resources of external providers (Table 2). Finally, we combine the external and internal resources for tax planning. On average, a firm has 2.67 FTEs in charge of tax planning activities (Table 2). This result corresponds to 26.47% (TPE_REL_TOTAL) of the total effort for tax activities.

We assume that a perceived change in audit aggressiveness in the last 3 years will not affect the total FTE within the tax department as a hiring or dismissal of staff will rather be a long-term decision. However, we verified this assumption by testing the effect on the total FTE within the tax department.[15] As expected, we find no association and proceed our analysis with the relative FTEs that measures the percentage of the tax department's resources that firms allocate to tax planning.

3.2.3 Quality of tax control framework

We develop an index to measure the quality of a TCF. To develop a transnationally valid index that allows us to compare highly heterogeneous companies, we use the OECD report regarding building better TCFs (OECD 2016).

The OECD notes that the system of internal control has to include the concrete specifics of the industry as well as the business, which indicates that there is no one-size-fits-all model. However, for a TCF, the OECD guide identifies six essential building blocks, which still should be consistent with the existing models of internal controls, such as the "internal control-integrated framework" of the Committee of Sponsoring Organizations of the Treadway Commission (OECD 2016).

The first building block proposed by the OECD is that a "**tax strategy is established"**. A functional strategy is an important part of the management control system (Rossing 2013). The attitude and behavior of firms toward tax compliance are especially affected by management (Joulfaian 2000). A tax strategy is supposed to define a long-term plan for the aims of firms with regard to taxes; this plan should be owned by senior management and should clearly articulate the board's risk appetite. This strategy is the basis for risk assessment and serves as the framework for the tasks of the tax department (Wunder 2009). The strategy should also contain further elements as an operational roadmap (OECD 2016). To measure the implementation of the first building block, we included several questions in our index. The first question was whether the organization had a documented tax strategy or overarching tax governance policy document that covered tax risks, e.g., application of a binding assessment, interaction with tax authorities and the effects of tax planning on the organization's reputation. Second, we included a question regarding the rank of tax compliance in the tax strategy objectives of the tax department. Finally, we included the question of how often in practice the strategy was reviewed and updated.

[15] We report the regression results in Table 10 in "Appendix 1".

Table 2 Descriptive statistics

Variables	(1) N	(2) Mean	(3) SD	(4) p25	(5) p50	(6) p75
TPE_REL_INT	201	0.230	0.195	0.0909	0.200	0.333
TPE_REL_EXT	127	0.367	0.319	0.101	0.303	0.567
TPE_REL_TOTAL	127	0.265	0.173	0.146	0.248	0.340
TCFI	201	0.630	0.171	0.509	0.627	0.768
AUDIT_AGG	201	0.002	0.889	− 0.781	0.053	0.663
LISTED	201	0.682	0.467	0	1	1
SIZE_1	201	0.274	0.447	0	0	1
SIZE_2	201	0.358	0.481	0	0	1
SIZE_3	201	0.109	0.313	0	0	0
SIZE_4	201	0.184	0.389	0	0	0
SIZE_5	201	0.075	0.263	0	0	0
FOREIGN_1	201	0.373	0.485	0	0	1
FOREIGN_2	201	0.333	0.473	0	0	1
FOREIGN_3	201	0.294	0.457	0	0	1
TAXREV_PERSTAFF	201	2.944	4.848	1.080	1.864	3.237
SYSTEM	201	0.126	1.457	− 1.274	0.668	1.564
COMPLEXITY	201	0.363	0.0314	0.343	0.369	0.378
GDP_CAPITA	201	41,247	16,251	38,762	42,322	49,971
WW	201	0.164	0.371	0	0	0

This table presents the descriptive statistics. TPE_REL_INT is the number of full-time employees responsible for tax planning relative to the total FTE within the tax department. TPE_REL_EXT is the amount of external resources used for tax planning measured in FTE relative to the total amount of external resources measured in FTE. TPE_REL_TOTAL is the sum of TPE_REL_INT and TPE_REL_EXT. TCFI is the index for the quality of the tax control framework (values are between 0 and 1). AUDIT_AGG measures perceived change in tax audit aggressiveness (derived by a confirmatory factor analysis for questions concerning the behavior of tax authorities). LISTED is a binary variable that equals 1 if the organization is listed on a public stock exchange or on any external public filings and 0 otherwise. SIZE_1 takes the value 1 if the sales of the organization are below US 1 billion and 0 otherwise. SIZE_2 takes the value 1 if the sales of the organization are between US 1 billion and US 5 billion and 0 otherwise. SIZE_3 takes the value 1 if the sales of the organization are between US 5 billion and US 10 billion and 0 otherwise. SIZE_4 takes the value 1 if the sales of the organization are between US 10 billion and US 50 billion and 0 otherwise. SIZE_5 takes the value 1 if the sales of the organization are over US 50 billion and 0 otherwise. FOREIGN_1 takes the value 1 if the organization has branches, subsidiaries or other permanent establishments in fewer than 10 countries and 0 otherwise. FOREIGN_2 takes the value 1 if the organization has branches, subsidiaries or other permanent establishments in at least 10 countries but in no more than 30 countries and 0 otherwise. FOREIGN_3 takes the value 1 if the organization has branches, subsidiaries or other permanent establishments in more than 30 countries and 0 otherwise. TAXREV_PERSTAFF is the corporate tax revenue in millions of USD divided by the full-time permanent employees within the revenue administration per country. SYSTEM is the extracted factor of a factor analysis of the country's legal tradition (common law vs. code law) and the strength of investor rights and ownership concentration. COMPLEXITY measures the complexity of a country's corporate income tax system between 0 (not complex) and 1 (extremely complex). GDP_CAPITA is the GDP per capita. WW takes the value 1 if the country has a worldwide approach and 0 otherwise

The second building block proposed by the OECD is called **"applied comprehensively"**. Almost every transaction within a firm is somehow capable of affecting the firm's tax position. Therefore, a TCF needs to cover all activities and should be applied in the day-to-day management of the firm. Furthermore, it needs to cover routine transactions and allow for identifying nonroutine transactions (OECD 2016). However, for departments other than the tax department, the assessment of tax risks is often difficult. Therefore, the integration of the tax department in processes in other departments and/or entities is a key factor for a TCF (Joulfaian 2000). To be comprehensive, the OECD suggests a process-oriented approach in which all tax policies, rules, procedures and processes are documented. Through their processes, firms must ensure that transactions that potentially pose a tax risk are assessed either by the responsible persons themselves or by the integration of the tax department. To measure the implementation of the second building block in firms, we first included a question asking in which areas of selected key transactions the tax strategy or overarching governance policy document instructed other organization entities to involve the tax department. Second, we included the question of how involved in practice the tax department was in the overall operational business planning/business strategy for the organization. Finally, we included the question of whether the firm had a tax code of conduct to frame its risk tolerance and tax decisions.

The third essential building block is **"responsibility assigned"**. The responsibility for the TCF is at the level of the board of an enterprise for the design, implementation and effectiveness of the TCF. The roles and responsibilities as well as the process organization must therefore be unambiguously assigned, and there need to be clear interfaces to the tax department (OECD 2016). Furthermore, the tax department needs to be properly resourced, which means that employees in that department should have the appropriate skills and experiences. However, large-scale firms in particular have a need for appropriate IT solutions for managing their tax risks. For the third building block, we first included a question of whether a board member (or board-level individual) took responsibility/accountability for tax. Second, we included a question that captured the responsibilities by asking whether the organization had a documented guideline/directive that included a (legally) binding involvement of the central tax department. Finally, we included the question of how satisfied the firm was with its enterprise-resource-planning (ERP) systems in terms of providing necessary tax data.

The fourth essential building block of a TCF is **"governance documented"**. According to the OECD, a TCF needs to ensure that transactions are compared with the expected outcome and that potential risks are identified and managed. These goals are reached by good tax governance. According to the OECD guide, the tax governance process should describe key performance indicators as well as communication methods in addition to responsibilities and accountability (OECD 2016). For that reason, we included three questions related to performance metrics. The first question related to the importance of performance metrics used by management to evaluate tax function performance in terms of whether the "tax function supports corporate strategy", "tax risks are consistent with corporate risk profile" and "tax risks are managed appropriately". Furthermore, firms need appropriate communication tools and reporting events. Because management plays a very

important role (Dyreng et al. 2010), we included the question of how often management was informed of tax/fiscal matters and how often the tax department reported to management.

The fifth essential building block is **"testing performed"**. The processes need to be monitored, and the TCF needs to be maintained so that errors can be detected and the TCF can steadily improve. The monitoring of the TCF is the responsibility of the firm. First, for our index, we included the question of whether the fulfilment of obligations by the tax department was monitored (e.g., by internal audits) and whether the tax department had access to reports/documentations of the internal audit/compliance of departments or others. Second, we included the question of whether management used performance metrics with respect to the tax function concerning the meeting on schedule of tax compliance deadlines (internal and jurisdictional), the accuracy of returns and avoidance of penalties, and the expected results of tax jurisdiction audits.

The last building block is **"assurance provided"**. According to the OECD, the TCF should provide assurance to stakeholders that the firm is in control of its tax risks and, therefore, that the relevant outputs are reliable. This building block can be seen as the result of the implementation of the five other essential building blocks (OECD 2016).

We constrained all answers to the 19 questions to values between zero and one and divided the sum by 19 to standardize our index to values from 0 to 1. Therefore, our tax control framework index (TCFI) represents an equally weighted sum of 19 questions regarding a transnationally functioning TCF and represents a value between 0 and 1 for all firms. The average quality of the TCF amounts to 63.02% with a standard deviation of 17.10% (Table 2). Table 3 provides an overview of the questions used and the measurement.

3.2.4 Control variables

Firms have different possibilities for tax planning depending on their size; larger firms generally have greater tax planning opportunities (Blaufus et al. 2019; Dyreng et al. 2016; Rego 2003). As a measure of size, we use firm sales (Goslinga et al. 2019). We distinguish five size categories, from SIZE_1 to SIZE_5, in ascending order. In our sample of 201 firms, 55 firms reported sales of less than US$ 1 billion (SIZE_1), 72 firms reported sales between US$ 1 billion and US$ 5 billion (SIZE_2), 22 firms reported sales between US$ 5 billion and US$ 10 billion (SIZE_3), 37 firms reported sales between US$ 10 billion and US$ 50 billion (SIZE_4), and 15 firms reported sales of over US$ 50 billion (SIZE_5). Moreover, we control whether the firm is listed on a public stock exchange or on any external public filing (LISTED) because listed firms are generally exposed to strict regulating rules, leading management to develop a sophisticated risk management system (Paape and Speklè 2012); therefore, LISTED might have an impact on the TCF as well as on tax avoidance. In our sample of 201 firms, 137 firms were listed on a public stock exchange or similar (LISTED). We control for measures of foreign operations (Gallemore and Labro 2015). The variable FOREIGN_1 (FOREIGN_2,

Table 3 Measurement of the tax control framework quality

Question		N	Mean	SD
Tax strategy established				
Does your organization have a documented tax strategy or overarching tax governance policy document that covers tax risks, e.g., application for a binding assessment, interaction with tax authorities and consequences of tax planning on the organization's reputation?	One if yes; zero if no	201	0.582	0.494
Please identify which of the following objectives are in the scope of the tax strategy of your tax department and rank them in order of priority	(13 – ranking of tax compliance)/12	201	0.781	0.229
In practice, how often is the strategy reviewed and updated?	One if "annually", "biannually" or "quarterly"; zero if "not regularly, only ad hoc"	201	0.363	0.482
Applied comprehensively:				
In which of the following areas is the tax strategy or overarching governance policy document instructing other organization entities to involve the tax department?	Sum of the areas divided by 12 (Possible areas: 1. changes in the operative business; 2. reorganization/M&A transactions; 3. product launches; 4. contract negotiation/conclusion; 5. draft of standard contracts; 6. establishing foreign permanent establishments/subsidiaries; 7. financing projects; 8. further market development; 9. change in the organization's IT structure; 10. personnel secondment; 11. modification of standard/sample contracts that are regularly used in practice; 12. transfer pricing)	201	0.485	0.224
In practice, how involved is the tax department in overall operational business planning/business strategy for the organization?	One if completely involved; two thirds if well involved; one third if somewhat involved; zero if not very/not at all involved	201	0.559	0.262
Do you have a tax code of conduct to frame your risk tolerance and tax decisions? If so, is it public or private?	One if yes (either public or private); zero if no	201	0.647	0.479
Responsibilities assigned				
Does a board member (or board-level individual) take responsibility/accountability for tax?	One if yes; zero if no	201	0.667	0.473
Does your organization have a documented guideline/directive that includes a (legally) binding involvement of the central tax department?	One if yes; zero if no	201	0.294	0.457
How satisfied are you with your organization's ERP systems in terms of providing necessary tax data? (Likert scale from 1 to 5)	One if four or five; zero otherwise	201	0.328	0.471

Table 3 (continued)

Question		N	Mean	SD
Governance documented				
Please rate the performance metrics used by management to evaluate the tax function performance for "Tax function supports corporate strategy"	One if four or five; zero otherwise	201	0.766	0.424
Please rate the performance metrics used by management to evaluate the tax function performance for "Tax risks are consistent with corporate risk profile"	One if four or five; zero otherwise	201	0.781	0.415
Please rate the performance metrics used by management to evaluate the tax function performance for "Tax risks are managed appropriately"	One if four or five; zero otherwise	201	0.915	0.279
How often is management informed of tax/fiscal matters?	One if "weekly", "monthly", "quarterly", "biannually" or "annually"; zero if "not regularly, only ad hoc"	201	0.866	0.342
How does the tax department report to the management?	One if "in written form, formally, aligned to guidelines/directives" or "verbally, at formalreporting meetings"; zero otherwise	201	0.567	0.497
Testing performed				
Is the fulfilment of obligations by the tax department monitored, e.g., by internal audits (excluding customs)?	One if yes; zero if no	201	0.537	0.500
Does the tax department have access to reports/documentation of the following?	One if "internal audit", "compliance department" or "other (specified); zero if no	201	0.572	0.496
Please rate the performance metrics used by management to evaluate the tax function performance for "Tax compliance deadlines (internal or jurisdictional) are met on schedule"	One if four or five; zero otherwise	201	0.781	0.415
Please rate the performance metrics used by management to evaluate the tax function performance for "Accuracy of returns and avoidance of penalties"	One if four or five; zero otherwise	201	0.756	0.430
Please rate the performance metrics used by management to evaluate the tax function performance for "Results of tax jurisdiction audits are as expected"	One if four or five; zero otherwise	201	0.726	0.447

FOREIGN_3) is a binary variable that is equal to one if the firm has either subsidiaries or permanent establishments in fewer than 10 countries (between 10 and 30 countries, in more than 30 countries). In our sample, 75 firms stated that they were active in fewer than 10 countries (FOREIGN_1), 67 firms were active in at least 10 countries but fewer than 30 countries (FOREIGN_2), and 59 firms were active in at least 30 different countries (FOREIGN_3). Furthermore, tax planning and tax authority monitoring differ among industries (Dyreng et al. 2008; Finley and Stekelberg 2020), so we included industry dummies using 2-digit SIC codes.[16] To control for country characteristics, we include the GDP per capita[17] (DeBacker et al. 2015a; Huizinga and Laeven 2008), a dummy if the home country has a worldwide tax system[18] (Atwood et al. 2012; Kanagaretnam et al. 2018), a measure for the tax complexity of the countries (Richardson 2006; Thomsen and Watrin 2018), SYSTEM[19] to control for cross-country institutional factors (Atwood et al. 2010, 2012) and TAXREV_PERSTAFF, i.e., the corporate tax revenue divided by the full-time permanent employees within the revenue administration as a proxy for the tax enforcement[20] of a country. Finally, we use the tax complexity index developed by Hoppe et al. (2021) for 2016,[21] which measures the complexity of the countries' corporate income tax system. The index covers the complexity of the tax code as well as the complexity of the tax framework.

3.3 Estimation strategy

To test H1, we estimate the following regression model using ordinary least squares:

$$TPE_i = \beta_0 + \beta_1 AUDIT\_AGG_i + \beta Controls + \varepsilon_i, \quad (1)$$

where TPE_i is the tax planning effort of firm i relative to the total FTE (either internal, external, or total), $AUDIT\_AGG_i$ is firm i's perception of a change in tax audit aggressiveness over the last 3 years, *Controls* is a vector of control variables

[16] 40 firms belong to the manufacturing sector (2-digit SIC codes between 20 and 40); 48 firms are from the transportation and public utilities sector (2-digit SIC codes between 40 and 50); 35 firms belong to the trade sector (2-digit SIC codes between 50 and 60); 36 firms are from the financial services sector (2-digit SIC codes between 60 and 70); and 18 firms are from the service sector (2-digit SIC codes between 70 and 90). Finally, we have 24 firms that cannot be assigned to one of the abovementioned sectors and are classified as "others" (either because only a few firms answered for that category, such as government (1) or aerospace & defense (3), or because the firms answered "other" to the question).

[17] We use the GDP per capita in US$ from 2016 obtained from The World Bank (2021).

[18] Following Atwood et al. (2012), we code a country territorial if they exempt at least 75% of the dividends from foreign subsidiaries. We hand collect the data from Ernst and Young (2016) and PwC (2021).

[19] Following Atwood et al. (2010) we use factor analysis to extract a single significant factor (eigenvalue 2.22) of the country's legal tradition (common law vs. code law) and the strength of investor rights and ownership concentration developed by La Porta et al. (1998). We hand collect the data regarding the country's legal tradition from CIA (2021).

[20] We use information on the corporate tax revenue from OECD (2022) in millions from 2016. The information of the number of full-time permanent staff in the revenue administration was collected for 2014/2015 from OECD (2017).

[21] We thank Caren Sureth-Sloane, Deborah Schanz and their team for sharing data from their Global MNC Tax Complexity Project with us, www.taxcomplexity.org.

including firm size, public listing, foreign activities, industry and country characteristics, ε_i is the error term of firm i, and βs are the regression coefficients.

To test H2, we use the same estimation approach but use the quality of the TCFI of firm i as the dependent variable:

$$TCFI_i = \beta_0 + \beta_1 AUDIT\_AGG_i + \beta Controls + \varepsilon_i, \quad (2)$$

where $TCFI_i$ is the quality of the TCF of firm i, ε_i is the error term of firm i, and βs are the regression coefficients.[22]

One drawback of our cross-sectional data is that we only have a level measure of the quality of the tax control frameworks, the tax planning effort, and the perception of increased tax enforcement in the past 3 years. Thus, we are only able to test whether associations between these variables are in line with our hypotheses, but we cannot clearly identify causal relationships.

To test whether our effects are driven by unobserved country variables, we conduct all analyses with and without country fixed effects. To address residual correlation, we always cluster the robust standard errors by country (Graham et al. 2014).[23]

4 Results

4.1 Impact of audit aggressiveness on firms' tax planning effort

The results of Eq. (1) are summarized in Table 4 for the overall tax planning effort as well as the external and internal planning effort.

We find no association between perceived changes in audit aggressiveness and the percentage of resources allocated to tax planning. This result is independent of whether we test the effect on internal, external or overall planning effort and whether we do or do not control for country fixed effects. In sum, we do not find evidence that the increased aggressiveness of tax authorities is associated with the tax planning effort of firms. Thus, we find no support for the hypothesis that an increase in audit aggressiveness reduces tax planning effort. This is remarkable because the results of previous studies showing a reduction in tax avoidance (measured by output variables, e.g., the ETR) could be due to a reduction in the risk of tax planning strategies without a change in the level of firms' tax planning investments, or to no change in tax planning behavior at all, either because firms' tax planning strategies are clearly legal or because tax audits are mainly concerned with detecting unintentional errors.

[22] The variance inflation factor (VIF) is below 3 for all variables except the country controls. This indicates that we do not have multicollinearity in our regression (see also Table 11 in "Appendix 1").

[23] We repeated the regression clustering the robust standard errors by industries. The results are unchanged.

4.2 Impact of audit aggressiveness on the quality of firms' tax control framework

We next examine whether a perceived change in tax audit aggressiveness is associated with the quality of the firms' TCF. The results are presented in Table 5.

We find a significant positive association between a perceived change in tax audit aggressiveness and the quality of TCFs. On average, an increase in perceived audit aggressiveness from the first quartile to the fourth quartile is associated with an increased quality of the TCF by 6.50 percentage points.[24] The result also holds if we include the control for country fixed effects, and it holds to several robustness tests (Sect. 5.1). The results support hypothesis H2 and suggest that the perception of more aggressive audits increases the benefits of TCFs. In doing so, they might reduce the expected costs of compliance errors, reduce the risk of being accused of tax evasion, and may better defend the firms' tax planning strategies through enhanced documentation. In sum, the results are consistent with the increased need for certainty for the firms' tax position if they perceive stricter enforcement (Goslinga et al. 2019).

4.3 Reverse causality

We assumed so far that audit aggressiveness reduces firms' tax planning activities (H1). However, tax planning effort of firms might also influence the aggressiveness of the tax auditor. We addressed this issue by reference to a time gap between the observed audit behavior and the tax planning activity. The question for an increasing audit scrutiny concerns the last 3 years whereas the questions concerning the tax planning activity refer to the current state. This implies that the respondent needs to compare past events with the current state. Thus, we believe that the way the variables are measured supports our assumption that audit aggressiveness affects tax planning behavior and not vice versa.

In addition, in our analysis of the impact of a perceived change in audit aggressiveness on TCFI, we assume that a more aggressive audit leads to higher risks and therefore to a demand of more certainty. The TCF acts as a protective shield (Brühne and Schanz 2022) and therefore mitigates potential monetary risks from the stricter enforcement. However, again one objection might be that there is a potential risk of reverse causality. A stronger TCF could increase the awareness and the understanding of all aspects of the tax environment within firms and therefore these firms might perceive finer changes in tax authority behavior. In our opinion, this kind of reverse causality is not very likely in our setting. Regardless of a TCF, tax audits in large companies are always overseen by the tax department, and tax auditors usually have the same contacts in the company (e.g., the head of the tax department). Since most respondents in our sample are senior tax department managers, it is very unlikely that they are unaware of tax audits in their group, as they are directly responsible for these tax audits. Therefore, a better tax control framework is unlikely to have

[24] We perform the calculation as follows: mean of the fourth quantile of Audit_AGG – mean of the first quantile of Audit_AGG) * coefficient of Audit_AGG in Eq. (2) = (1.146 – (−1.133)) * 0.0285 = 0.0650.

Table 4 Regression results: association between audit aggressiveness and tax planning effort

Variables	(1) TPE_REL_INT	(2) TPE_REL_INT	(3) TPE_REL_EXT	(4) TPE_REL_EXT	(5) TPE_REL_TOTAL	(6) TPE_REL_TOTAL
AUDIT_AGG	−0.004	−0.012	0.006	−0.004	−0.011	−0.011
	(0.019)	(0.017)	(0.036)	(0.038)	(0.015)	(0.018)
LISTED	0.037	0.042	0.018	0.003	0.015	0.005
	(0.027)	(0.026)	(0.077)	(0.093)	(0.030)	(0.036)
FOREIGN_2	0.090**	0.105**	−0.195**	−0.164*	0.013	0.028
	(0.035)	(0.039)	(0.071)	(0.087)	(0.042)	(0.049)
FOREIGN_3	0.040*	0.041	−0.265***	−0.268**	−0.038	−0.041
	(0.022)	(0.025)	(0.082)	(0.119)	(0.029)	(0.041)
SIZE_2	0.051	0.035	0.041	0.120	−0.018	0.001
	(0.045)	(0.054)	(0.082)	(0.081)	(0.042)	(0.048)
SIZE_3	0.028	0.031	0.093	0.186	−0.005	0.019
	(0.045)	(0.048)	(0.133)	(0.126)	(0.061)	(0.065)
SIZE_4	0.018	0.030	0.070	0.108	−0.013	−0.002
	(0.038)	(0.047)	(0.080)	(0.085)	(0.038)	(0.043)
SIZE_5	−0.058	−0.062	−0.053	0.012	−0.099**	−0.096
	(0.038)	(0.049)	(0.076)	(0.111)	(0.043)	(0.061)
TAXREV_PERSTAFF	−0.001		−0.003		−0.003*	
	(0.002)		(0.005)		(0.002)	
SYSTEM	−0.020***		0.005		−0.011	
	(0.006)		(0.023)		(0.008)	
COMPLEXITY	−0.585		−1.830**		−1.568***	
	(0.530)		(0.822)		(0.520)	
GDP_CAPITA	2.11e−06**		6.57e−07		1.32e−06	
	(8.45e−07)		(2.49e−06)		(9.25e−07)	
WW	0.028		0.068		0.036	
	(0.027)		(0.108)		(0.034)	

Table 4 (continued)

Variables	(1) TPE_REL_INT	(2) TPE_REL_INT	(3) TPE_REL_EXT	(4) TPE_REL_EXT	(5) TPE_REL_TOTAL	(6) TPE_REL_TOTAL
CONSTANT	0.251	0.409***	1.152***	0.431**	0.810***	0.246***
	(0.204)	(0.073)	(0.368)	(0.152)	(0.209)	(0.057)
Observations	201	201	127	127	127	127
Adjusted R-squared	0.123	0.194	0.004	0.006	0.046	0.014
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	No	Yes	No	Yes	No	Yes

This table presents the regression results for Eq. (1). TPE_REL_INT is the number of full-time employees responsible for tax planning relative to the total FTE within the tax department. TPE_REL_EXT is the amount of external resources used for tax planning measured in FTE relative to the total amount of external resources measured in FTE. TPE_REL_TOTAL is the sum of TPE_REL_INT and TPE_REL_EXT. AUDIT_AGG measures the perceived change in tax audit aggressiveness (derived by a confirmatory factor analysis for questions concerning the behavior of tax authorities). LISTED is a binary variable that equals 1 if the organization is listed on a public stock exchange or on any external public filings and 0 otherwise. FOREIGN_1 takes the value 1 if the organization has branches, subsidiaries or other permanent establishments in fewer than 10 countries and 0 otherwise. FOREIGN_2 takes the value 1 if the organization has branches, subsidiaries or other permanent establishments in at least 10 countries but in no more than 30 countries and 0 otherwise. FOREIGN_3 takes the value 1 if the organization has branches, subsidiaries or other permanent establishments in more than 30 countries and 0 otherwise. SIZE_1 takes the value 1 if the sales of the organization are below US 1 billion and 0 otherwise. SIZE_2 takes the value 1 if the sales of the organization are between US 1 billion and US 5 billion and 0 otherwise. SIZE_3 takes the value 1 if the sales of the organization are between US 5 billion and US 10 billion and 0 otherwise. SIZE_4 takes the value 1 if the sales of the organization are between US 10 billion and US 50 billion and 0 otherwise. SIZE_5 takes the value 1 if the sales of the organization are over US 50 billion and 0 otherwise. TAXREV_PERSTAFF is the corporate tax revenue in millions of USD divided by the full-time permanent employees within the revenue administration per country. SYSTEM is the extracted factor of a factor analysis of the country's legal tradition (common law vs. code law) and the strength of investor rights and ownership concentration. COMPLEXITY measures the complexity of a country's corporate income tax system between 0 (not complex) and 1 (extremely complex). GDP_CAPITA is the GDP per capita. WW takes the value 1 if the country has a worldwide approach and 0 otherwise. Robust standard errors in parentheses. ***$p<0.01$, **$p<0.05$, *$p<0.1$

an impact on the perception of information requests, the application and withholding of penalties, the duration of tax audits, etc. Furthermore, if, in contrast to our assumption, the TCF was already improved before the audit aggressiveness has been increased, we would expect a negative association between both variables because a TCF serves the purpose to signal compliance and thus to enhance the relationship with the tax authority (OECD 2013, 2016). Overall, the issue of reverse causality with respect to H2 is thus not very likely in our case simply because a TCF should not change the information about tax audits (their length, assessed penalties, auditors' requests for information, etc.) within the tax department of large companies. However, we acknowledge that we cannot fully rule out this issue due to missing instrumental variables.

5 Robustness checks and additional analyses

5.1 Robustness checks

We subject our results to a series of robustness tests. For brevity, we do not tabulate the robustness tests, but all results are available from the authors upon request. First, we test whether our results depend on our definition of tax planning investments. Thus, we test the association between a perceived change in audit aggressiveness and every single category of resources allocated to merger, acquisition and restructuring activities; to research and planning, excluding transfer pricing; and to transfer pricing internally, externally and overall each relative to the total FTE. We find no significant association. Next, we combine our TPE measure with the performance metrics used. To this aim, we use factor analysis to extract a factor "tax avoidance" from TPE_REL and the following performance measurement metrics used by management to evaluate the tax function: "Tax function achieves appropriate return on investment from tax activities, such as tax savings associated with tax planning", "Tax function adds economic value to organization" and "Tax function generates cash savings or manages cash taxes effectively". Furthermore, we repeat the regressions using TPE_REL/sales as a proxy for tax avoidance. Finally, we repeat the factor analysis with TPE_REL/sales and the aforementioned questions concerning the performance measurement metrics. All results remain unchanged.

Second, we test alternative measures for our control variables. In particular, we use the number of employees to measure firm size and the percentage of foreign to total sales to measure foreign activities (alone and in addition to controlling for sales). The results remain unchanged.

Third, we examine the effect of outliers using a robust regression (Leone et al. 2019; Powers et al. 2016) for the whole dataset and find qualitatively unchanged results. Fourth, to test whether our estimates are biased because of zero-value observations in the tax planning variables, we repeat all the reported regressions using Tobit estimations. Again, all results remain unchanged.

Fifth, we examine whether cooperative compliance or horizontal monitoring programs affect our result that a rise in perceived audit aggressiveness is positively associated with the quality of TCFs. In particular, we include an additional binary

control variable that is equal to one if the firm indicated that tax authorities had adopted a cooperative compliance/horizontal monitoring program (COOPERATIVE). Our findings remain unchanged.

5.2 Additional analyses

In this section, we investigate (1) whether the perceived change in audit aggressiveness and the quality of the TCF are associated with the resource allocation among different activities within the tax department and (2) whether they are associated with the firms' need for process or educational improvements.

So far, we have only examined the association between audit aggressiveness and tax planning or the TCF quality, respectively. In an additional analysis, we examine whether perceived audit aggressiveness is associated with other activities of the tax department. To this end, we also consider potential indirect associations mediated by the quality of the TCF. Thus, we conduct a mediation analysis by employing structural equation modeling. The independent variable is the perceived audit aggressiveness, the dependent variable is the percentage of FTEs that are allocated to the respective tax activity[25] and the TCFI serves as mediator. For brevity, we report only the results for the tax activities for which we find significant associations (Table 6).

We find a direct positive association of Audit_AGG with the percentage of FTEs responsible for controversy and audit defense. Beyond that, we do not find a significant direct association with any other tax activity. Importantly, with respect to the association between perceived audit aggressiveness and the percentage of FTEs responsible for tax planning (TPE_REL_INT) or each of the subcategories of tax planning,[26] we again find no direct association. However, we find some evidence of an indirect negative association between audit aggressiveness and TPE_REL_INT but only if we control for country fixed effects.[27] Moreover, we find an indirect positive association between Audit_AGG and the percentage of FTEs responsible for risk management and governance, Sarbanes Oxley and similar (fully mediated by TCFI).[28] Taken together, these results are consistent with the interpretation

[25] The tax activities include accounting for income taxes; business unit support and consulting; controversy and audit defense; day-to-day processing of intercompany transactions; merger, acquisition and restructuring activities; research and planning, excluding transfer pricing; risk management and governance, Sarbanes Oxley and similar; tax department administration; tax returns/compliance; tax technology; training for tax personnel; transaction taxes (VAT, Indirect Tax, GST, etc.); transfer pricing (see question Q6 in "Appendix 2").

[26] The three activities that present TPE_REL_INT are (1) merger, acquisition and restructuring activities, (2) research and planning, excluding transfer pricing, and (3) transfer pricing.

[27] With respect to the subcategories of tax planning, we find a partial mediation of Audit_AGG with the percentage of FTEs allocated to mergers, acquisition and restructuring and with the percentage of the FTEs responsible for transfer pricing. However, we only find the first result, when we control for country fixed effects and the latter if we do not control for country fixed effects. Regarding the category "research and planning, excluding transfer pricing", we do not find any association.

[28] As the direct effect of Audit_AGG is not significant, but the Sobel's z-test (Iacobucci et al. 2007) is significant, this is a complete mediation.

Table 5 Regression results: the association between audit aggressiveness and the quality of firms' tax control framework

Variables	(1) TCFI	(2) TCFI
AUDIT_AGG	0.0285**	0.0298**
	(0.0129)	(0.0136)
LISTED	0.0873***	0.0816**
	(0.0274)	(0.0337)
FOREIGN_2	−0.0568**	−0.0422
	(0.0254)	(0.0343)
FOREIGN_3	−0.0128	−0.0211
	(0.0395)	(0.0405)
SIZE_2	0.0277	0.0175
	(0.0267)	(0.0326)
SIZE_3	−0.0005	0.0016
	(0.0476)	(0.0528)
SIZE_4	0.0776**	0.0832**
	(0.0353)	(0.0354)
SIZE_5	0.0546	0.0582
	(0.0537)	(0.0442)
TAXREV_PERSTAFF	0.0045	
	(0.0031)	
SYSTEM	0.0102	
	(0.0131)	
COMPLEXITY	0.806	
	(0.611)	
GDP_CAPITA	−6.33e−07	
	(1.25e−06)	
WW	−0.0382	
	(0.0369)	
CONSTANT	0.289	0.615***
	(0.251)	(0.0753)
Observations	201	201
Adjusted R-squared	0.096	0.205
Industry FE	Yes	Yes
Country FE	No	Yes

This table presents the regression results for Eq. (2). TCFI is the index for the quality of the tax control framework (values are between 0 and 1). AUDIT_AGG measures the perceived change in tax audit aggressiveness (derived by a confirmatory factor analysis for questions concerning the behavior of tax authorities). LISTED is a binary variable that equals 1 if the organization is listed on a public stock exchange or on any external public filings and 0 otherwise. FOREIGN_1 takes the value 1 if the organization has branches, subsidiaries or other permanent establishments in fewer than 10 countries and 0 otherwise. FOREIGN_2 takes the value 1 if the organization has branches, subsidiaries or other permanent establishments in at least 10 countries but in no more than 30 countries and 0 otherwise. FOREIGN_3 takes the value 1 if the organization has

Table 5 (continued)

branches, subsidiaries or other permanent establishments in more than 30 countries and 0 otherwise. SIZE_1 takes the value 1 if the sales of the organization are below US 1 billion and 0 otherwise. SIZE_2 takes the value 1 if the sales of the organization are between US 1 billion and US 5 billion and 0 otherwise. SIZE_3 takes the value 1 if the sales of the organization are between US 5 billion and US 10 billion and 0 otherwise. SIZE_4 takes the value 1 if the sales of the organization are between US 10 billion and US 50 billion and 0 otherwise. SIZE_5 takes the value 1 if the sales of the organization are over US 50 billion and 0 otherwise. TAXREV_PERSTAFF is the corporate tax revenue in millions of USD divided by the full-time permanent employees within the revenue administration per country. SYSTEM is the extracted factor of a factor analysis of the country's legal tradition (common law vs. code law) and the strength of investor rights and ownership concentration. COMPLEXITY measures the complexity of a country's corporate income tax system between 0 (not complex) and 1 (extremely complex). GDP_CAPITA is the GDP per capita. WW takes the value 1 if the country has a worldwide approach and 0 otherwise. Robust standard errors in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

that tax departments have more controversy and audit defense tasks when audit aggressiveness increases and therefore improve their TCF, which in turn leads to more resources being allocated to the risk management function within the tax department.

To test whether there are associations between audit aggressiveness, the TCF and the firms' need for educational improvements, we use a question concerning the importance of investing in further education in certain skills among the tax department team within the next 3 years, including "tax technical skills", "tax technology skills", "tax reputation management skills", "communication skills", "general business acumen", "general finance skills", "project management skills", and "other skills" (answers were on a Likert scale from 1 to 5, see question Q21 in "Appendix 2"). Furthermore, firms rated the process improvements they hope to achieve in the next 5 years. They rated "process standardization", "tightly connect the provision and compliance process", "paperless environment", "consulting with business or operating units" and "formalize risk management" on a Likert scale from 1 to 5 (see question Q20 in "Appendix 2"). Again, we consider potential indirect associations through a mediation analysis. The results are presented in Tables 7, 8, and 9.

We find evidence for a positive direct association between perceived audit aggressiveness and the importance of investing in further education in "tax reputation management skills" and "communication skills". These results suggest that a higher importance of reputational concerns for a firm is associated with the altering of the assessment of the underlying risk by management due to the change in perceived tax audit aggressiveness. Reputational risks can have an impact on tax avoidance (Graham et al. 2014) and therefore on the need for skills in the tax department, whose employees need to evaluate and control the tax planning strategies. This finding is also consistent with the effect on communication skills, which represent a very important factor in tax risk assessment (Brühne and Schanz 2022). Furthermore, we find

Table 6 Results of the mediation analysis: the association between perceived audit aggressiveness, TCFI, and the percentage of FTEs assigned to specific tasks in the tax department

Variables	(1) CONTRO-VERSY_ PERC	(2) CONTRO-VERSY_ PERC	(3) RISK_MA_ PERC	(3) RISK_MA_ PERC	(5) TPE_REL_ INT	(6) TPE_REL_ INT	(7) M&A_PERC	(8) M&A_PERC	(9) TP_PERC	(10) TP_PERC
Direct Effect AUDIT_ AGG	0.010*	0.012**	0.005	0.004	− 0.001	− 0.007	− 0.000	0.002	0.005	− 0.009
Indirect Effect AUDIT_ AGG	− 0.001	0.000	0.001**	0.002**	− 0.003	− 0.005*	− 0.002	− 0.002	− 0.003*	− 0.002
Total Effect AUDIT_ AGG	0.009*	0.012**	0.006*	0.005	− 0.004	− 0.012	− 0.002	− 0.001	0.002	− 0.011
Effect TCFI	− 0.040	0.006	0.042**	0.055***	− 0.122*	− 0.155**	− 0.053	− 0.079*	− 0.110**	− 0.081*
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

This table presents the results of mediation analysis with TCFI as the mediator, AUDIT_AGG as the treatment and FTE per activity relative to the total FTE within the tax department as the dependent variable. CONTROVERSY_PERC is the percentage of full-time employees responsible for controversy and audit defense (Income Taxes) within the tax department. M&A_PERC is the percentage of full-time employees responsible for merger, acquisition and restructuring activities within the tax department. RISK_MA_PERC is the percentage of full-time employees responsible for risk management and governance, Sarbanes Oxley and similar within the tax department. TP_PERC is the percentage of full-time employees responsible for transfer pricing within the tax department. TPE_REL_INT is the number of full-time employees responsible for tax planning within the tax department relative to the total FTE within the tax department. TCFI is the index for the quality of the tax control framework (values are between 0 and 1). AUDIT_AGG measures perceived tax audit aggressiveness (derived by a confirmatory factor analysis for questions concerning the behavior of tax authorities). Robust standard errors in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

indirect associations (mediated by TCFI) between audit aggressiveness and the need to improve "tax reputation management skills" as well as "general business acumen".

With respect to the relationship between audit aggressiveness and the importance of further process improvements, we do not find any direct associations. However, we find positive indirect associations between audit aggressiveness and the importance to improve the following processes: "tightly connect the provision and compliance process" and "paperless environment". Therefore, tax audit aggressiveness seems to affect firms' processes, at least indirectly.[29]

Regarding the TCF, we find a positive association between the quality of the TCF and the importance of further education in "tax technical skills", "tax technology skills", "tax reputation management skills" and "general business acumen". Moreover, we find a positive association between the quality of the TCF and the need for process improvements related to the objectives "tightly connect the provision and compliance process", "paperless environment" and "consulting with business or operating units". These results suggest that the higher quality of a TCF leads firms to see a greater need for further investment in human and technology capital within the tax department and in process improvements. Future research should thus further investigate the long-term impact of the quality of TCF in firms, as it could significantly change the firms' organization of the tax function.

6 Discussion

While previous research relies on variables, such as the effective tax rate or tax liability, to determine firms' responses to an increase in tax audit probability (e.g., Ayers et al. 2019; Finley 2019; Hoopes et al. 2012), we contribute to prior accounting research by investigating how an increase in perceived tax audit aggressiveness is associated with the tax planning effort and the quality of a TCF using data on approximately 200 corporate tax functions that contain detailed information on (1) the way firms use resources for different tax activities (including tax planning), (2) firms' perception of the aggressiveness of tax authority behavior, and (3) the quality of firms' TCF.

Contrary to expectations, our findings show that a perceived increase in aggressive tax enforcement is not associated with a lower level of firms' investments in tax planning. In particular, because our sample includes mainly large firms with tax departments having quite large resources, one potential explanation could be that

[29] We also find a partial mediation of Audit_AGG with the importance of investing in advance tax technical skills within the next 3 years (TECHNICAL), the importance of investing in advance tax technology skills within the next 3 years (TECHNOLOGY), the importance of investing in advance tax reputation management skills within the next 3 years (REPUTATION), the importance of process improvements with regard to tightly connecting the provision and compliance process that the firm hopes to achieve within the next 5 years (CONNECTION) and the importance of process improvements with regard to consulting with business or operating units that the firm hopes to achieve within the next 5 years (CONSULTING). Furthermore, we find a complete mediation of AUDIT_AGG on the importance of investing in advance general business acumen within the next 3 years (BUSINESS_ACUMEN) and the importance of process improvements with regard to the paperless environment that the firm hopes to achieve within the next 5 years (PAPERLESS).

Table 7 Results of the mediation analysis: the association between perceived audit aggressiveness, TCFI, and the firms' need for educational improvements within the next 3 years (I)

Variables	(1) TECHNICAL	(2) TECHNICAL	(3) TECHNOLOGY	(4) TECHNOLOGY	(5) REPUTATION	(6) REPUTATION	(7) COMMUNICATION	(8) COMMUNICATION
Direct effect AUDIT_AGG	−0.025	−0.063	0.172**	0.084	0.147**	0.151**	0.171**	0.158**
Indirect effect AUDIT_AGG	0.022	0.027*	0.021	0.034*	0.040**	0.045**	0.026	0.027
Total Effect AUDIT_AGG	−0.004	−0.036	0.192**	0.118	0.186***	0.196***	0.197***	0.185***
Effect TCFI	0.759**	0.890***	0.725*	1.140**	1.388***	1.512***	0.910*	0.907
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	No	Yes	No	Yes	No	Yes	No	Yes

This table presents the results of mediation analysis with TCFI as the mediator, AUDIT_AGG as the treatment, firms' perception of necessary changes with regard to human and technology capital as well as existing processes as the dependent variable. TECHNICAL measures on a Likert scale from 1 to 5 (1 = not important at all to 5 = very important) the importance of investing in advance tax technical skills within the next 3 years. TECHNOLOGY measures on a Likert scale from 1 to 5 (1 = not important at all to 5 = very important) the importance of investing in advance tax technology skills within the next 3 years. REPUTATION measures on a Likert scale from 1 to 5 (1 = not important at all to 5 = very important) the importance of investing in advance tax reputation management skills within the next 3 years. COMMUNICATION measures on a Likert scale from 1 to 5 (1 = not important at all to 5 = very important) the importance of investing in communications skills within the next 3 years. TCFI is the index for the quality of the tax control framework (values are between 0 and 1). AUDIT_AGG measures perceived tax audit aggressiveness (derived by a confirmatory factor analysis for questions concerning the behavior of tax authorities). Robust standard errors in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

resources allocated to tax planning cannot be adjusted quickly. The questions we used to measure audit aggressiveness refer to a period of three prior years. Thus, if resource allocations need longer than 3 years, this would explain why there is no association between the perceived increase in audit aggressiveness over the last 3 years and the firms' current tax planning investments. However, Kim et al. (2019) find that the typical public firm converges over a 3-year period toward their optimal level of tax avoidance and that multinational firms adjust faster. In light of these results, a perceived increase in audit aggressiveness over the last 3 years should also trigger some short-term response with respect to the allocation of resources to the tax planning function if firms actually change their tax planning effort. Thus, we conclude that the observed (short-term) increase in firms' effective tax rates after an increase in tax enforcement that is reported in prior studies (Hoopes et al. 2012; Kubick et al. 2016) cannot be due to a (short-term) reduction in the firms' resources allocated to tax planning but may potentially be due only to a correction of detected errors or a shift in tax planning strategies that does not alter the amount of tax planning investments.

In addition to the effects on tax planning, a higher detection risk of compliance errors due to more aggressive audits makes errors costlier to firms and thus increases the incentive to improve the quality of their TCF. In line with this rationale, we observe a significant positive association between the quality of firms' TCF and the perception of tax audit aggressiveness. Although the implementation and operation of internal control frameworks is generally seen as very costly by firms (Alexander et al. 2013), our results suggest that firms faced with aggressive tax audit expect that the benefits of well-working TCFs outweigh these costs. Moreover, audit aggressiveness is associated with firms' emphasis on the reputation and communication skills of their tax department staff and the reward of tax certainty. As TCFs also provide more certainty and may protect firms from reputational damages by reducing the risk of being accused of tax evasion, all our findings point in the same direction: increased tax enforcement is associated with firms' increased need to achieve tax certainty through improving their tax control framework more than through improving the firms' tax planning investment levels. In line with this rationale, we find a positive direct association between perceived audit aggressiveness and the percentage of resources that a firm's tax department allocates to controversy/audit defense and an indirect association with the percentage of resources that a firm allocates to risk management.

However, some limitations must be considered when interpreting our results. First, our sample contains rather large firms. For SMEs, other reactions would be possible because these firms have, for example, lower audit probabilities and may not have comparable resources to establish high-quality tax control frameworks. Second, we exploit cross-sectional data, and all variables are measured at the same time; thus, we cannot make causal claims but can only observe statistical associations. Moreover, as we do not have instrumental variables, we cannot fully rule out potential reverse causality issues. Third, we cannot completely exclude that firms do not change their tax planning effort because they anticipate a regularity of shocks in audit aggressiveness. However, given

Table 8 Results of the mediation analysis: the association between perceived audit aggressiveness, TCFI, and the firms' need for educational improvements within the next 3 years (II)

Variables	(9) BUSINESS-ACUMEN	(10) BUSINESS-ACUMEN	(11) FINANCE-SKILLS	(12) FINANCE-SKILLS	(13) PROJECT-MANAGE	(14) PROJECT-MANAGE
Direct effect AUDIT_AGG	0.034	−0.005	0.131**	0.093	0.106*	0.086
Indirect effect AUDIT_AGG	0.031*	0.031*	0.025	0.027	0.016	0.021
Total effect AUDIT_AGG	0.066	0.026	0.156**	0.120*	0.123**	0.107
Effect TCFI	1.010***	1.048**	0.892	0.915	0.570	0.717
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	No	Yes	No	Yes	No	Yes

This table presents the results of mediation analysis with TCFI as the mediator, AUDIT_AGG as the treatment, firms' perception of necessary changes with regard to human and technology capital as well as existing processes as the dependent variable. BUSINESSACUMEN measures on a Likert scale from 1 to 5 (1 = not important at all to 5 = very important) the importance of investing in advance general business acumen within the next 3 years. FINANCESKILLS measures on a Likert scale from 1 to 5 (1 = not important at all to 5 = very important) the importance of investing in advance general finance skills within the next 3 years. PROJECTMANAGE measures on a Likert scale from 1 to 5 (1 = not important at all to 5 = very important) the importance of investing in advance project management skills within the next 3 years. TCFI is the index for the quality of the tax control framework (values are between 0 and 1). AUDIT_AGG measures perceived tax audit aggressiveness (derived by a confirmatory factor analysis for questions concerning the behavior of tax authorities). Robust standard errors in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

our results, this reasoning does not seem very convincing, as we observe other short-term responses to perceived audit aggressiveness. Fourth, our proxy for tax planning investments only concerns the FTE in charge for tax planning. We do not have information about the ability of the staff (e.g. education), which could have an impact on the association between tax planning investments and tax avoidance. Nonetheless, we would assume that there is in general a high level of education within the tax department especially with regard to tax planning. Fifth, in practice, it is difficult to clearly separate tax planning tasks from tax compliance tasks. Thus, our measure of tax planning effort may include not only activities aimed at reducing taxes, but also tax reporting activities required by a tax authority that do not result in tax reduction. However, even when we use only the single category "research and planning" as proxy for tax planning effort, we find no association with perceived audit aggressiveness. Sixth, measuring the perceived change in audit aggressiveness, we asked for a perception of an "increasing" effect. We cannot exclude that the word "increasing" potentially biased the survey participants. Seventh, because our data are fully

Table 9 Results of the mediation analysis. The association between perceived audit aggressiveness, TCFI, and the firms' need for process improvements within the next 5 years (III)

Variables	(1) STANDARDIZATION	(2) STANDARDIZATION	(3) CONNECTION	(4) CONNECTION	(5) PAPERLESS	(6) PAPERLESS	(7) CONSULTING	(8) CONSULTING	(9) FORMALIZE	(10) FORMALIZE
Direct effect AUDIT_AGG	−0.006	−0.063	0.018	−0.019	−0.005	−0.069	0.040	0.040	0.027	0.052
Indirect effect AUDIT_AGG	0.009	0.026**	0.031*	0.045**	0.034*	0.063**	0.026	0.027*	0.023	0.036*
Total effect AUDIT_AGG	0.003	−0.037	0.048	0.026	0.029	−0.006	0.066	0.067*	0.051	0.088
Effect TCFI	0.313	0.886**	1.070**	1.501**	1.191**	2.102***	0.906*	0.908*	0.815	1.220**
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

This table presents the results of mediation analysis with TCFI as the mediator, AUDIT_AGG as the treatment, and the need for process improvements within the next 5 years. STANDARDIZATION measures on a Likert scale from 1 to 5 (1 = not important at all to 5 = very important) the importance of process improvements with regard to process standardization that the firm hopes to achieve within the next 5 years. CONNECTION measures on a Likert scale from 1 to 5 (1 = not important at all to 5 = very important) the importance of process improvements with regard to tightly connecting the provision and compliance process that the firm hopes to achieve within the next 5 years. PAPERLESS measures on a Likert scale from 1 to 5 (1 = not important at all to 5 = very important) the importance of process improvements with regard to the paperless environment that the firm hopes to achieve within the next 5 years. CONSULTING measures on a Likert scale from 1 to 5 (1 = not important at all to 5 = very important) the importance of process improvements with regard to consulting with business or operating units that the firm hopes to achieve within the next 5 years. FORMALIZE measures on a Likert scale from 1 to 5 (1 = not important at all to 5 = very important) the importance of process improvements with regard to risk management formalizing that the firm hopes to achieve within the next 5 years. TCFI is the index for the quality of the tax control framework (values are between 0 and 1). AUDIT_AGG measures perceived tax audit aggressiveness (derived by a confirmatory factor analysis for questions concerning the behavior of tax authorities). Robust standard errors in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

anonymized and do not contain data on the firms' effective tax rates, we are not able to test the relationship between tax planning investments and effective tax rates in our sample. Thus, our conclusions refer only to the tax planning effort and not necessarily to the level of tax avoidance. Future research might address the above limitations by combining archival panel and survey data for firms of different sizes.

Regarding policy implications our study contributes to the current discussion on the consequences of increased tax enforcement, such as the one currently expected in the United States due to the increase in the IRS budget (Muresianu 2022). Our results show that it is unclear whether governments have the ability to reduce firms' tax planning investments through stricter audits; at least, our research shows that there is no association between tax audit aggressiveness and the resources firms allocate to tax planning. However, if more audit aggressiveness leads to increased tax compliance, then states might rise their tax revenue by reducing unintentional errors. In addition, firms' established TCFs could serve as the basis for building cooperative relationships between firms and tax authorities, as has been introduced in some countries in the form of horizontal monitoring or cooperative compliance (OECD 2013).

Regarding empirical tax research related to the firms' tax avoidance, our findings suggest that one should be cautious when drawing conclusions about tax avoidance based only on changes in the effective tax rate of firms (see also Drake et al. 2020; Feller and Schanz 2017). Our findings show that firms differ significantly in their quality of tax control. This suggests large differences in tax risk because firms with a lower level of tax control quality are prone to compliance errors, which might also contribute to the observed cross-sectional variation in the firms' effective tax rates. Unfortunately, researchers usually do not have access to data regarding firms' tax control quality. However, countries differ in their tax transparency rules. Some countries, such as the United Kingdom, require large firms to publish their tax strategy, which includes information about the firms' risk management and governance in relation to taxation. Future research might thus examine whether the firms' TCFs are related to their effective tax rates or the volatility of effective tax rates.

Appendix 1

See Tables 10, 11 and 12.

Table 10 Regression results: the effect of a perceived change in audit aggressiveness on the total FTE within the tax department

Variables	(1) FTE_TOTAL	(2) FTE_TOTAL
AUDIT_AGG	0.327	0.181
	(0.548)	(0.560)
LISTED	3.549**	3.166**
	(1.394)	(1.449)
FOREIGN_2	− 1.389	− 1.303
	(1.013)	(1.413)
FOREIGN_3	5.181	4.421
	(3.465)	(3.264)
SIZE_2	1.878	2.418**
	(1.222)	(1.108)
SIZE_3	3.406	5.564**
	(2.637)	(2.330)
SIZE_4	10.23***	11.18***
	(3.358)	(3.363)
SIZE_5	20.01***	21.81***
	(5.462)	(5.271)
TAXREV_PERSTAFF	0.133	
	(0.149)	
SYSTEM	− 0.0998	
	(0.474)	
COMPLEXITY	83.13**	
	(33.02)	
GDP_CAPITA	− 3.72e−05	
	(7.84e−05)	
WW	− 1.478	
	(2.514)	
CONSTANT	− 29.46**	− 1.043
	(11.78)	(2.250)
Observations	201	201
Adjusted R-squared	0.343	0.403
Industry FE	Yes	Yes
Country FE	No	Yes

This table presents the regression results for a perceived change in audit aggressiveness on the total FTE within the tax department. FTE_TOTAL is the sum of FTEs at tax department headquarters location. AUDIT_AGG measures the perceived change in tax audit aggressiveness (derived by a confirmatory factor analysis for questions concerning the behavior of tax authorities). LISTED is a binary variable that equals 1 if the organization is listed on a public stock exchange or on any external public filings and 0 otherwise. FOREIGN_1 takes the value 1 if the organization has branches, subsidiaries or other permanent establishments in fewer than 10 countries and 0 otherwise. FOREIGN_2 takes the value 1 if the organization has branches, subsidiaries or other permanent establishments in at least 10 countries but in no more than 30 countries and 0 otherwise.

Table 10 (continued)

FOREIGN_3 takes the value 1 if the organization has branches, subsidiaries or other permanent establishments in more than 30 countries and 0 otherwise. SIZE_1 takes the value 1 if the sales of the organization are below US 1 billion and 0 otherwise. SIZE_2 takes the value 1 if the sales of the organization are between US 1 billion and US 5 billion and 0 otherwise. SIZE_3 takes the value 1 if the sales of the organization are between US 5 billion and US 10 billion and 0 otherwise. SIZE_4 takes the value 1 if the sales of the organization are between US 10 billion and US 50 billion and 0 otherwise. SIZE_5 takes the value 1 if the sales of the organization are over US 50 billion and 0 otherwise. TAXREV_PERSTAFF is the corporate tax revenue in millions of USD divided by the full-time permanent employees within the revenue administration per country. SYSTEM is the extracted factor of a factor analysis of the country's legal tradition (common law vs. code law) and the strength of investor rights and ownership concentration. COMPLEXITY measures the complexity of a country's corporate income tax system between 0 (not complex) and 1 (extremely complex). GDP_CAPITA is the GDP per capita. WW takes the value 1 if the country has a worldwide approach and 0 otherwise. Robust standard errors in parentheses. $^{***}p<0.01$, $^{**}p<0.05$, $^{*}p<0.1$

Table 11 Pearson Correlation Matrix (full sample with 201 firms)

	TCFI	AUDIT_AGG	LISTED	FOREIGN_1	FOREIGN_2	FOREIGN_3	SIZE_1	SIZE_2	SIZE_3	SIZE_4
TCFI	1									
AUDIT_AGG	0.163*	1								
LISTED	0.228**	0.0338	1							
FOREIGN_1	−0.00717	−0.166*	−0.400***	1						
FOREIGN_2	−0.0542	−0.0410	0.257***	−0.546***	1					
FOREIGN_3	0.0637	0.218**	0.159*	−0.497***	−0.456***	1				
SIZE_1	−0.143*	−0.202**	−0.251***	0.334***	−0.0789	−0.273***	1			
SIZE_2	−0.0406	−0.0159	−0.0685	−0.0615	0.110	−0.0486	−0.459***	1		
SIZE_3	−0.0250	0.0734	0.0344	−0.0728	−0.0451	0.124	−0.215**	−0.262***	1	
SIZE_4	0.155*	0.119	0.214**	−0.154*	0.0726	0.0885	−0.292***	−0.355***	−0.167*	1
SIZE_5	0.118	0.110	0.194**	−0.141*	−0.120	0.274***	−0.174*	−0.212**	−0.0996	−0.135
TAXREV_PERSTAFF	0.0183	−0.0430	0.115	−0.108	0.107	0.00455	−0.0943	−0.000241	0.194**	−0.0302
SYSTEM	0.112	0.0218	0.108	0.126	−0.0513	−0.0805	0.103	−0.0135	−0.0343	−0.104
COMPLEXITY	0.0850	0.0578	−0.160*	0.266***	−0.0772	−0.203**	0.130	0.0249	0.0539	−0.184**
GDPPERCAPITA	−0.0359	−0.0984	0.0417	−0.186**	0.0209	0.176*	−0.155*	0.0891	0.127	−0.0639
WW	0.0143	0.205**	0.101	0.0468	−0.114	0.0682	0.0895	−0.0510	0.0167	−0.0372

	SIZE_5	TAXREV_PERSTAFF	SYSTEM	COMPLEXITY	GDPperCAPITA	WW
TCFI						
AUDIT_AGG						
LISTED						
FOREIGN_1						
FOREIGN_2						
FOREIGN_3						
SIZE_1						
SIZE_2						

Table 11 (continued)

	SIZE_5	TAXREV_PERSTAFF	SYSTEM	COMPLEXITY	GDPperCAPITA	WW
SIZE_3						
SIZE_4						
SIZE_5	1					
TAXREV_PERSTAFF	−0.0251	1				
SYSTEM	0.0443	−0.104	1			
COMPLEXITY	−0.0573	−0.360***	0.0593	1		
GDPPERCAPITA	0.0442	0.611***	−0.00728	−0.440***	1	
WW	−0.0236	−0.0408	0.163*	0.221**	−0.352***	1

TCFI is the index for the quality of the tax control framework (values are between 0 and 1). AUDIT_AGG measures the perceived change in tax audit aggressiveness (derived by a confirmatory factor analysis for the questions concerning the behavior of the tax authority). LISTED is a binary variable that equals 1 if the organization is listed on a public stock exchange or on any external public filings and 0 otherwise. FOREIGN_1 takes the value 1 if the organization has branches, subsidiaries or other permanent establishments in less than 10 countries and 0 otherwise. FOREIGN_2 takes the value 1 if the organization has branches, subsidiaries or other permanent establishments in at least 10 countries but in not more than 30 countries and 0 otherwise. FOREIGN_3 takes the value 1 if the organization has branches, subsidiaries or other permanent establishments in more than 30 countries and 0 otherwise. SIZE_1 takes the value 1 if the sales of the organization are below US 1 billion and 0 otherwise. SIZE_2 takes the value 1 if the sales of the organization are between US 1 billion and US 5 billion and 0 otherwise. SIZE_3 takes the value 1 if the sales of the organization are between US 5 billion and US 10 billion and 0 otherwise. SIZE_4 takes the value 1 if the sales of the organization are between US 10 billion and US 50 billion and 0 otherwise. SIZE_5 takes the value 1 if the sales of the organization are over US 50 billion and 0 otherwise. TAXREV_PERSTAFF is the corporate tax revenue in millions of USD divided by the full-time permanent employees within the revenue administration per country. SYSTEM is theextracted factor of a factor analysis of the country's legal tradition (common law vs. code law) and the strength of investor rights and ownership concentration. COMPLEXITY measures the complexity of a country's corporate income tax system between 0 (not complex) and 1 (extremely complex). GDP_CAPITA is the GDP per capita. WW takes the value 1 if the country has a worldwide approach and 0 otherwise. Robust standard errors in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

Table 12 Item response theory

Questions:	Coefficient	Robust SE	z	$P>\|z\|$
Discrimination				
More frequent requests for information	0.6674	0.2629	2.54	0.011
More extensive requests for information	0.6560	0.2032	3.23	0.001
More audit queries	1.0607	0.2456	4.32	0.000
More use of formal powers to obtain information	1.1239	0.3778	2.98	0.003
Compared to 3 years ago, are audits undertaken by the tax authorities you deal with taking longer to conclude?	1.7352	0.3297	5.26	0.000
Compared to 3 years ago, are tax authorities you deal with more prepared to take disputes to litigation rather than to seek a negotiated settlement?	1.5525	0.3294	4.71	0.000
More aggressiveness in raising assessments	1.6262	0.3556	4.57	0.000
More frequent application of penalties	1.5862	0.3972	3.99	0.000
More frequent sustention of penalties raised	1.4486	0.5494	2.64	0.008
Is the level of difficulty in reaching resolution with the tax authorities you deal with increasing?	2.9563	0.7444	3.97	0.000
In negotiations/settlement proceedings during the last 3 years, are tax authorities taking a harder line, e.g., not splitting the difference in marginal cases or expecting taxpayers to concede substantially all of the tax in dispute?	37,283	1.3208	2.82	0.005
Difficulty				
More frequent requests for information	− 1.4022	0.6135	− 2.29	0.022
More extensive requests for information	− 0.5188	0.2512	− 2.07	0.039
More audit queries	− 0.1259	0.1917	− 0.66	0.511
More use of formal powers to obtain information	1.8515	0.5392	3.43	0.001
Compared to 3 years ago, are audits undertaken by the tax authorities you deal with taking longer to conclude?	0.1147	0.1472	0.78	0.436
Compared to 3 years ago, are tax authorities you deal with more prepared to take disputes to litigation rather than to seek a negotiated settlement?	0.7810	0.1929	4.05	0.000
More aggressiveness in raising assessments	0.1182	0.1787	0.66	0.509
More frequent application ofpenalties	0.9245	0.2083	4.44	0.000

Table 12 (continued)

Questions:	Coefficient	Robust SE	z	$P>\|z\|$
More frequent sustention of penalties raised	2.2738	0.5306	4.29	0.000
Is the level of difficulty in reaching resolution with the tax authorities you deal with increasing?	− 0.2189	0.0836	− 2.62	0.009
In negotiations/settlement proceedings during the last 3 years, are tax authorities taking a harder line, e.g., not splitting the difference in marginal cases or expecting taxpayers to concede substantially all of the tax in dispute?	0.0125	0.0907	0.14	0.891

Appendix 2: Survey instrument (extract)

General questions on your organization's size and structure

Q1. Please indicate your organization's primary industry:

☐ Aerospace & Defense
☐ Automotive Manufacturers and suppliers
☐ Asset Management
☐ Banking and Financial Services
☐ Chemistry & Pharmacy
☐ Energy, Power & Utilities
☐ Food, drink, retail and consumer products
☐ Government
☐ Healthcare, life sciences & pharmaceuticals
☐ Insurance
☐ Manufacturing
☐ Media and Entertainment
☐ Private Equity
☐ Real Estate
☐ Technology and Telecommunications
☐ Trade, Transport & Tourism
☐ Other

Q2. What is the location of your headquarters?

Q3. What bracket does the sales revenue/turnover of your organization fall into?

☐ < US 1 billion
☐ US 1 billion – US 5 billion
☐ US 5 billion – US 10 billion
☐ US 10 billion – US 50 billion
☐ > US 50 billion

Q3a. Broken down by

National territory: %
Foreign countries: %

Q4. How many employees are working for your organization?

☐ < 1,000 employees
☐ 1,000–10,000 employees
☐ 10,000–50,000 employees
☐ > 50,000 employees

Q5. In how many countries does your organization have branches, subsidiaries or other permanent establishments?

☐ < 10 countries
☐ 10–20 countries
☐ 20–30 countries
☐ 30–50 countries
☐ 50–100 countries
☐ > 100 countries

Q5. Is your organization listed on a public stock exchange or on any external public filings?

☐ Yes
☐ No

Responsibilities and duties of the central tax department

Q6. How are tax department resources allocated by full-time employees (FTEs) to the following functions? *(Total number should equal total number of FTEs within your tax department)*

	# of FTEs at tax department headquarters location
Accounting for income taxes	
Business unit support and consulting	
Controversy and audit defense (Income Taxes)	
Day-to-day processing of intercompany transactions	
Merger, acquisition and restructuring activities	
Research and planning, excluding transfer pricing	
Risk management and governance, Sarbanes Oxley and similar	
Tax department administration	
Tax returns/compliance	
Tax technology	
Training for tax personnel	
Transaction taxes (VAT, Indirect Tax, GST, etc.)	
Transfer pricing	
Total FTEs	

Q7. For each of the following core tax functions, please indicate in whole numbers the estimated percentage (%) that is performed:

a) by the tax department
b) elsewhere in the organization
c) by an external provider
d) not relevant to your organization

(Please provide an approximate percentage for each, ensuring each line adds up to 100%, or tick "Not applicable for my organization".)

	Performed by tax department	Performed by organization but not by tax department	Performed by tax service providers	Not applicable for my organization	Total
Accounting for income taxes				☐	
Business unit support and consulting				☐	
Controversy and audit defense (Income Taxes)				☐	
Day-to-day processing of intercompany transactions				☐	
Merger, acquisition and restructuring activities				☐	
Research and planning, excluding transfer pricing				☐	
Risk management and governance, Sarbanes Oxley and similar				☐	
Tax department administration				☐	
Tax returns/compliance				☐	
Tax technology				☐	
Training for tax personnel				☐	
Transaction taxes (VAT, Indirect Tax, GST, etc.)				☐	
Transfer pricing				☐	
Other				☐	

Q8. For each of the following, please rate the performance metrics measurements used by management to evaluate the Tax function performance: *(1-5 scale where 1 = Not important at all and 5 = Very important)*

	Not important at all 1 (1)	2 (2)	3 (3)	4 (4)	Very important 5 (5)
Accuracy of returns and avoidance of penalties	☐	☐	☐	☐	☐
Business units are satisfied with tax services provided	☐	☐	☐	☐	☐
Effective tax rate is at expected rate (no surprises)	☐	☐	☐	☐	☐
Personnel taxes are effectively managed	☐	☐	☐	☐	☐
Results of tax jurisdiction audits are as expected	☐	☐	☐	☐	☐
Tax compliance deadlines (internal or jurisdictional) are met on schedule	☐	☐	☐	☐	☐
Tax function achieves appropriate return on investment from tax activities, such as tax savings associated with tax planning	☐	☐	☐	☐	☐
Tax function adds economic value to organization	☐	☐	☐	☐	☐
Tax function effectively manages resources, including outside service providers	☐	☐	☐	☐	☐
Tax function generates cash savings or manages cash taxes effectively	☐	☐	☐	☐	☐
Tax function stays within its administrative budget	☐	☐	☐	☐	☐
Tax function supports corporate strategy	☐	☐	☐	☐	☐
Tax risks are consistent with corporate risk profile	☐	☐	☐	☐	☐
Tax risks are managed appropriately	☐	☐	☐	☐	☒
Other	☐	☐	☐	☐	☐

Governance, reputational risk management and strategy

Q9. Do you have a tax code of conduct to frame your risk tolerance and tax decisions? If so, is it public or private?

☐ Yes, and it is publicly available
☐ Yes, but it is for internal use only
☐ No

Q10. Does your organization have a documented tax strategy or overarching tax governance policy document that covers tax risks, e.g., application for a binding assessment, interaction with tax authorities and consequences of tax planning on the organization's reputation?

☐ Yes
☐ No

Q10a. In practice, how often is the strategy reviewed and updated?

☐ Not regularly, only ad hoc
☐ Quarterly
☐ Bi-annually
☐ Annually

Q11. Please identify which of the following objectives are in the scope of the tax strategy of your tax department and rank them in order of priority?

Cost minimization
Deferred tax assets
FATCA or equivalent processes
Group tax rate
Loss carried forwards
Monitoring future developments
Risk minimization
Target cash rate
Tax accounting (determination of tax positions in financial statements)
Tax compliance (proper fulfilment of fiscal regulation)
Tax reputation
Transparency
Other

Q12. In which of the following areas is the tax strategy or overarching governance policy document instructing other organization entities to involve the tax department?

(Select all that apply)

☐ Changes in the operative business
☐ Reorganizations/M&A transactions
☐ Product launches
☐ Contract negotiation/conclusion
☐ Draft of standard contracts
☐ Establishing foreign permanent establishments/subsidiaries
☐ Financing projects
☐ Further market development (geographically)
☐ Change in the organization's IT structure
☐ Personnel secondment
☐ Modification of standard/sample contracts that are regularly used in practice
☐ Transfer pricing
☐ Others

Q13. Does your organization have a documented guideline/directive that includes a (legally) binding involvement of the central tax department?

☐ Yes
☐ No

Q13. In practice, how involved is the tax department in overall operational business planning/business strategy for the organization?

☐ Completely involved
☐ Well involved
☐ Somewhat involved
☐ Not very/not at all involved

Tax reporting and stakeholder communications

Q14. How often is management informed of tax/fiscal matters?

☐ Not regularly, only ad hoc
☐ Weekly
☐ Monthly
☐ Quarterly
☐ Bi-annually
☐ Annually

Q15. How does the tax department report to management?

☐ In written form, formally, aligned to guidelines/directives
☐ In written form, informally
☐ Verbally, at formal reporting meetings
☐ Verbally, informally

Q16. Is the fulfilment of obligations by the tax department monitored, e.g., by internal audits (excluding customs)?

☐ Yes
☐ No

Q17. Does the tax department have access to reports/documentation of the following? *(Select all that apply)*

☐ Internal audit
☐ Compliance department
☐ None of the above
☐ Other

Q18. Does a board member (or board-level individual) take responsibility/accountability for tax?

☐ Yes
☐ No

Tax department of the future

Q19. On a scale of 1–5, how satisfied are you with your organization's ERP systems in terms of providing necessary tax data? *(1 = completely unsatisfied; 5 = highly satisfied)*

	Completely unsatisfied 1 (1)	2 (2)	3 (3)	4 (4)	Highly satisfied 5 (5)
	☐	☐	☐	☐	☐

Q20. Please rate the following process improvements you hope to achieve in the next 5 years on a scale of 1–5. *(1 = Not important at all; 5 = Very important)*

	Not important at all 1 (1)	2 (2)	3 (3)	4 (4)	Very important 5 (5)
Process standardization	☐	☐	☐	☐	☐
Tightly connect the provision and compliance process	☐	☐	☐	☐	☐
Paperless environment	☐	☐	☐	☐	☐
Consulting with business or operating units	☐	☐	☐	☐	☐
Formalize risk management	☐	☐	☐	☐	☐
Other skills	☐	☐	☐	☐	☐

Q21. In regard to further education for tax department employees, please rank the importance of investing to advance the following skills on your team within the next 3 years. *(1 = Not important at all; 5 = Very important)*

	Not important at all 1 (1)	2 (2)	3 (3)	4 (4)	Very important 5 (5)
Tax technical skills	☐	☐	☐	☐	☐
Tax technology skills	☐	☐	☐	☐	☐
Tax reputation management skills	☐	☐	☐	☐	☐
Communications skills	☐	☐	☐	☐	☐
General business acumen	☐	☐	☐	☐	☐
General finance skills	☐	☐	☐	☐	☐
Project management skills	☐	☐	☐	☐	☐
Other skills	☐	☐	☐	☐	☐

Increasing audit scrutiny and changing tax authority behavior and practices

Q22. Over the past 3 years, have you noticed an increase in the following activities of the tax authorities you deal with?

Q22. Over the past three years, have you noticed an increase in the following activities of the tax authorities you deal with?

Q22a. More frequent contact

☐ Yes
☐ No

Q22b. More frequent requests for information

☐ Yes
☐ No

Q22c. More extensive requests for information

☐ Yes
☐ No

Q22d. More audit queries

☐ Yes
☐ No

Q22e. More use of formal powers to obtain information

☐ Yes
☐ No

Q22f. More aggressiveness in raising assessments

☐ Yes
☐ No

Q22g. More frequent application of penalties

☐ Yes
☐ No

Q22h. More frequent sustention of penalties raised

☐ Yes
☐ No

Q23. Compared to three years ago, are audits undertaken by the tax authorities you deal with taking longer to conclude?

☐ Yes
☐ About the same
☐ No

Q24. Is the level of difficulty in reaching resolution with the tax authorities you deal with increasing?

☐ Yes
☐ About the same
☐ No

Q25. In negotiations/settlement proceedings during the last three years, are tax authorities taking a harder line, e.g., not 'splitting the difference' in marginal cases or expecting taxpayers to concede substantially all of the tax in dispute?

☐ Yes
☐ About the same
☐ No

Q26. Compared to three years ago, are the tax authorities you deal with more prepared to take disputes to litigation rather than to seek a negotiated settlement?

☐ Yes
☐ About the same
☐ No

Acknowledgements We thank Jochen Hundsdoerfer (editor) and two anonymous reviewers for their helpful comments. K. Blaufus gratefully acknowledges financial support from KPMG Germany.

Funding Open Access funding enabled and organized by Projekt DEAL.

Declarations

Conflicts of interest There are no conflicts of interest/competing interests.

Availability of data and materials The data is confidential and not publicly available.

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