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Too Complex to Cooperate? - Tax Complexity and Cooperative Compliance*

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Abstract

This study investigates whether, how, and under what conditions the expected positive association between cooperative compliance programs and tax compliance is attenuated by tax complexity. Many countries have implemented cooperative compliance programs to improve compliance, however, the effectiveness of these programs varies across countries. I expect and find that the complexity of a country's tax system might impair the compliance-enhancing impact of cooperative compliance programs. Using cross-country data of 57 countries, I find that cooperative compliance programs generally promote compliance, except in countries with highly complex tax codes. Moreover, these programs are positively associated with tax compliance even if tax procedures, such as tax filing and payment or tax audits, are highly complex. My findings suggest that cooperative compliance programs can compensate for mistrust caused by complex tax procedures and enhance compliance. However, they may not be effective tools to enhance compliance in complex tax codes.

Keywords: tax complexity; cooperative compliance; tax compliance
JEL Classification: C33; G28; H20; H25, H26; K34

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1 Introduction

This study investigates whether, how and under what conditions tax complexity can jeopardize the effectiveness of cooperative compliance programs (CCPs) to improve compliance. CCPs, introduced by tax administrations, build on cooperation with taxpayers rather than deterrence and are recommended by multinational organizations to fight tax uncertainty and enhance compliance (OECD (2013), International Chamber of Commerce (2019)). Therefore, the introduction of a cooperative compliance program is a signal from the tax authority to the taxpayers of its intention to follow a cooperative approach and jointly searching for solutions in tax conflicts. However, CCPs do not always seem to enhance compliance (Larsen (2019)). This study investigates how differences in tax systems, particularly in tax complexity might impair this compliance-enhancing potential of CCPs.

Several countries have introduced such programs to improve tax administration-taxpayer cooperation. A prominent example is the "horizontal monitoring within the medium to very large businesses segment" in the Netherlands (The Netherlands Tax and Customs Administration (2010)), which has been implemented in 2005. It was one of the first programs implementing the idea of an eyes-sight relation between the authority and, at least some, taxpayers. A number of countries, like the United Kingdom (2015) or Austria (2019), followed this approach and implemented similar programs in the recent past. Survey evaluations show that tax administrators and taxpayers generally appreciate CCPs in the United Kingdom (Oats and Widt (2019)) and Austria (Enachescu et al. (2019)) and perceive increased trust between taxpayers and tax authorities. However, not all CCPs are met with acceptance. E.g., the Swedish fördjupad dialog ("in-depth dialogue") was not accepted by taxpayers as they perceived the introduction of the CCP as an unnecessary addition to the previously already trustful relationship. Therefore, the additional shift in trust through the introduction of the CCP has been perceived as superfluous and actually arouse mistrust and therefore the CCP ultimately was not successful (Larsen (2019)).

The slippery slope framework (Kirchler, Hoelzl, and Wahl (2008)) provides a theoretical basis for this study. The slippery slope model indicates that compliance (voluntary or ensured) by taxpayers can be established via two channels: trust in the tax authorities and power of the tax authorities. Trust is defined as the perception of individuals and social groups that the tax authorities are benevolent and

work beneficially.[1] However, if a tax system is very complex, trust may be violated (Kirchler, Hoelzl, and Wahl (2008)). Power is defined as to what extent a tax authority is able to enforce compliance, e.g., use of targeted audits, increase the audit probability, detect tax evasion etc.[2] Also the power might depend on the complexity of the tax system, e.g., on the complexity of tax filing and payment procedures or audits that ultimately shape the effectiveness of tax enforcement. Cooperative compliance programs rather build on the idea of trust (cooperation) than on power to establish higher levels of compliance. These programs are designed to change the relation between tax authorities and taxpayers in a trustful manner. Besides increasing trust, e.g., through increased and timelier submission of relevant documentation by the taxpayer and timelier decision processes in the authorities, the power dimension in the slippery slope framework is also affected. If the authorities receive relevant information earlier and, depending on the design of the cooperative compliance program, more frequently, they are in a better position to detect fraud and will be perceived as more powerful.[3] Taken together, the slippery slope framework predicts an increase in tax compliance through cooperation. Moreover, the implementation of a CCP is a signal from the tax authorities to all eligible taxpayers for a trustful environment. The perception of a trustful environment might even spillover to companies that are not part of the CCP.[4] Introducing a CCP is expected to increase trust in the sense of the slippery slope framework. Consistently, CCPs are expected to positively affect tax compliance. However, both dimensions, trust and power, might be affected by the complexity of the tax system.

Noticeably, tax systems tend to become more complex in the recent past (Hoppe et al. (2023)). Anecdotal and survey evidence indicates that complexity in the tax system is substantial and points

[1] Falsetta, Schafer, and Tsakumis (2024) support the notion that trust in institutions increasing taxpayer compliance by finding in an experimental study that taxpayers are likely to be more compliant if they support governmental spending.

[2] See Kirchler, Hoelzl, and Wahl (2008), p. 212.

[3] Simone, Sansing, and Seidman (2013) state that enhanced relationships between tax authorities and taxpayers increase the ability of tax authorities to detect uncertain tax positions. Survey results by King (2024) show increased tax compliance by imposing appropriately severe non-compliance penalties.

[4] In a theoretical experiment, Engl, Riedl, and Weber (2021) indicate a positive spillover effect of prosocial institutions, such as cooperative compliance programs, on not affected agents. In fact, Bauckloh et al. (2021) show significant evidence for spillover effects of tax avoidance on peers´ firm value, indicating similar tax compliance patterns in peer groups. Moreover, Müller and Weinrich (2020) document tax knowledge diffusions via strategic alliances, Cen et al. (2018) state tax knowledge diffusion along the supply chain and Brown and Drake (2014) find network effects on compliance behavior, e.g., through board interlocks or shared auditors. In an experimental study, Fochmann, Müller, and Overesch (2021) show that trustful signals from the tax authority, in their case a correctly pre-filled tax return, lead to increased compliance behavior by taxpayers.

towards tax complexity might obstruct tax compliance (Milliron (1985), Saad (2014), Ulph (2015)). Moreover, recent survey evidence about tax complexity shows tax authorities and taxpayers being concerned about the reliability and effectiveness of the tax audit process. Taxpayers perceive major problems in the complexity of the tax audit process visible in inconsistent decisions by tax auditors (Hoppe et al. (2020)). Tax experts in German tax administrations are concerned about both the complexity in the documentation and cooperation of taxpayers in the audit process (Bornemann, Schipp, and Sureth-Sloane (2021)). These observations also can be translated to the slippery slope framework. In the slippery slope model, complexity in the tax system influences both trust and power. Trust is positively associated with "subjective tax knowledge" (Kirchler, Hoelzl, and Wahl (2008)) by taxpayers. Due to complexity in the tax system, it is costlier for taxpayers to acquire the required tax knowledge and therefore trust is expected to decrease in tax complexity. But complexity not only influences the taxpayers' cost for gaining knowledge, also it challenges tax auditors to effectively conduct tax audits and to detect fraud, because in a more complex system taxpayers might use more sophisticated paths for being non-compliant. The slippery slope framework suggests that a decrease in the power of the tax authorities taxpayers can more easily use loopholes in the tax system and hide non-compliance.[5] In line with this notion, the majority of prior literature provides evidence that higher levels of tax complexity are expected to be associated with higher levels of non-compliance (Milliron (1985), Saad (2014), Ulph (2015)).[6] However, if tax complexity is seen as a severe threat to trust (and power), the introduction of the CCP might not be able to compensate for it and, thus, ultimately fail to enhance compliance. Therefore, I interact the two seemingly distinct constructs CCP and tax complexity to shed light on possible inferences in associations regarding tax compliance.

I am the first to exploit data on tax complexity to investigate the potentially attenuating interplay of tax complexity the compliance-enhancement of CCPs in a cross-country setting.[7] Through empirical analyses, primarily using data from the Global MNC Tax Complexity Survey[8] and the ISORA

[5] See Kirchler, Hoelzl, and Wahl (2008), p. 217.
[6] A very limited number of studies propose high levels of complexity to be associated with higher tax compliance. See Beck, Davis, and Jung (1991) and Cuccia and Carnes (2001).
[7] Siglé et al. (2022) conduct a study relying on survey and audit data form the Netherlands, but their study does not take tax complexity into account and is only limited to the Netherlands, while this study is a cross-country investigation.
[8] See https://taxcomplexity.org.

(International Survey on Revenue Administration) database[9], this study establishes a basis for subsequent tax compliance analyses. I contribute to the literature in three ways: First, I add to the sparse literature on the outcome of cooperative compliance programs by showing substantial insights on the association of cooperative compliance programs and tax compliance. Second, I deliver new insights on the association between tax complexity and tax compliance in a cross-country setting. Third, using the Tax Complexity Index by Hoppe et al. (2023) allows me to distinguish between different kinds of tax complexity and investigate potential differences in their interaction with CCPs and the resulting association on tax compliance. The results show significant evidence for the signaling effect of cooperative compliance programs not being present in countries with highly complex tax codes but in countries with highly complex tax frameworks. Countries with a CCP in place and indicating a high level of tax framework complexity appear to have a 4.83 % lower value for non-compliance. Contrastingly, countries with a highly complex tax code having a CCP in place indicate 4.73 % more non-compliance. To test the robustness of these results, I conduct single country studies with firm-level data in Austria and Italy. Both countries offer CCPs to firms meeting certain requirements. I investigate Austria and Italy, because Italy is a high tax complex country, especially in terms of tax code complexity. I find evidence, that tax code complexity is negatively associated with the compliance enhancement of CCPs. Austria is a low to moderate tax complex country. The results of these firm-level studies underline the results of the country-level investigations. Firms in Austria show significantly more tax compliance when the country offers a CCP. CCP-eligible firms indicate a 3.39 (5.92) percentage points higher GAAP (Cash) ETRs and 3.37 percentage point lower non-compliance. I do not find statistically significant coefficients in the investigations of the CCP-eligible firms in Italy, indicating that the expected positive influence of the CCP on tax compliance may be vanished by tax code complexity.

The study is structured as follows: Section 2 presents the theoretical background of cooperative compliance programs, their aim of increasing tax compliance and the construct of tax complexity. Based on the predictions of the slippery slope framework, section 3 develops the hypotheses of this study. section 4 describes the research design and section 5 the data. In sections 6 and 7 I present the main

[9] See https://data.rafit.org.

results of the country-level data and the robustness checks with firm data from Compustat. Section 8 concludes.

2 Theoretical and institutional background

In the recent past, cooperative compliance programs have been implemented in many different countries and many different facets. Supranational organizations like the OECD or the ICC (International Chamber of Commerce) presented guidelines and frameworks for encouraging countries to implement CCPs (OECD (2013), International Chamber of Commerce (2019)). CCPs, in the sense of the OECD and the ICC, can be beneficial for both tax authorities and taxpayers.[10] Tax authorities can use resources more efficiently and reach higher compliance levels in their country. Taxpayers can achieve legal certainty ex ante when engaging in CCPs (Goslinga et al. (2021)). Taken together, the inherent aim of CCPs is to improve tax compliance.[11] Moreover, by implementing a framework of trust and confidence surrounding taxpayers and tax administrations, CCPs have the potential to increase the effectiveness and efficiency of taxation (OECD (2013)). The implementation of a CCP can be seen as a signal of the tax authorities to the taxpayers to be interested in a trustful relationship. In most countries, companies can only participate in CCPs if they meet certain requirements in terms of firm size and, moreover, the companies have the opportunity to decide if they want to participate in the program or not. Nonetheless, the signal of the implementation of a CCP has an influence on all eligible taxpayers in the country because the tax authorities will be perceived as more trustworthy.

A number of countries implemented CCPs, primarily targeting medium-sized to large corporate taxpayers or High-Net-Worth-Individuals (HNWI), in various forms. Notably, one of the first and most discussed CCPs is the Dutch horizontal monitoring model (Colon (2017), Widt and Oats (2017), Huiskers-Stoop and Gribnau (2019)). The Netherlands implemented their horizontal monitoring model in 2005 and after some initial problems (Widt (2017)) the program exists until today.[12] For engaging in the

[10] I do not include International Compliance Assurance Programs (ICAP) into to scope of this study, since these are multinational tools. So, these programs are not only designed by and for single countries. The signaling effect of the implementation of these programs will differ from CCPs in the sense of this study. In this study I focus on single-country cooperative compliance programs and rely on the data of the ISORA database to define if a country provides a CCP or not.

[11] In this study, I follow Alm (1991) and define tax compliance as reporting all income and paying all taxes in accordance with applicable laws, regulations, and court decisions.

[12] From 2020 onwards, the Netherlands adjusted the Horizontal Tax Monitoring to large companies only.

Dutch horizontal monitoring, seven steps have to be undertaken (The Netherlands Tax and Customs Administration (2010)). As a first step, a detailed profile of the taxpayer is made ("up-to-date client profile") to capture the current economic situation of the taxpayer. Depending on who takes the initiative for entering the horizontal monitoring, the profile can be created either by the tax administration or by the taxpayer itself. In the next steps, both sides figure out if horizontal monitoring is feasible or not. The first horizontal monitoring meeting takes place, and a compliance scan of the taxpayer is generated. Additionally, in the next step, pending tax issues must be solved. The first four steps must be seen as a mutual information exchange, in which the taxpayer and the administration gather information and figure out if engaging in horizontal monitoring is desirable and auspicious or not. Building on the information exchanged, the next step is the mutual agreement of the implementation of horizontal monitoring, codified in a binding compliance agreement and possible other covenants as a basis for cooperation. After successfully developing the compliance agreement, step six of this procedure is about the analysis and improvement of the tax control framework of the firm by improving, or implementing, a tax control framework in the company in coordination with the administration. In step seven the form and intensity of monitoring is determined, based on the specific requirements of the company. If all seven steps can be conducted successfully, the horizontal monitoring will be established. In principle, this agreement does not expire; however, periodic evaluations occur, typically every three years; with the option for either party to terminate the horizontal monitoring at any point in time.

Despite successful CCPs in countries like Austria (Enachescu et al. (2019)), the United States (Widt, Oats, and Mulligan (2019)) or the United Kingdom (Oats and Widt (2019)), there is a variety of countries where implementation was not successful yet due to bigger or smaller problems.[13] In the case of the Swedish fördjupad dialog ("in-depth dialogue"), a CCP was met with strong resistance and, in the end, failed (Hambre (2019), Larsen (2019)). The above-mentioned studies evaluating the CCPs find several possible reasons for the problems or the failure of the programs, but none of them investigates the influence of complexity in the tax system.

[13] E.g. Australia & New Zealand (Dabner and Burton (2009), Denmark (Boll and Brehm Johansen (2018)), Finland (Potka-Soininen, Pellinen, and Kettunen (2018)) and Norway (Brøgger and Aziz (2018)).

Nonetheless, tax complexity is a serious issue in the taxation process and might undermine the compliance and trust-enhancing effect of a CCP.[14] Measuring tax complexity is not easy and a highly discussed topic in the literature. Hoppe et al. (2023) provide with their Tax Complexity Index (TCI) a new and, for the purpose of this study, suitable and comprehensive approach. By surveying tax professionals all over the world they develop a measure for the overall complexity of a tax system over time and across jurisdictions. Prior approaches often only capture selected countries or few facets of the complexity of a tax system.[15] Another huge advantage of the TCI is its extensiveness. By using an input-oriented approach in the index construction, the index captures the different components of the tax system, e.g., different dimensions of the tax code and the tax framework. Given that the implementation of CCPs does not change the tax code itself but the taxation procedures, it is particularly important to study the role of the tax framework complexity.

Evidence on the relation of tax complexity and tax compliance is mixed. The majority of studies find a negative association between tax complexity and tax compliance, indicating an increased non-compliant behavior in the presence of tax complexity (Milliron (1985), Saad (2014), Budak and James (2018), Blesse (2021)). Borrego, Lopes, and Ferreira (2016) find empirically in a Portuguese setting, that tax complexity is related to unintended tax aggressive behavior and even fraud. Taing and Chang (2021) find in a study in Cambodia that unintended non-compliance by taxpayers increase in complex tax systems and are even able to show, that the likelihood of intentional non-compliance also increases with tax complexity. Sapiei, Kasipillai, and Eze (2014) consider tax complexity as a serious determinant of non-compliance in their Malaysian study. Taken together, one can think about complex tax systems as multidimensional constructs which are hard to monitor and contain inconsistencies and loopholes that might induce taxpayers to avoid intentionally or unintentionally, or even evade, taxes. Nevertheless, some studies raise concerns about the aforementioned relation between tax complexity and taxpayer compliance. Beck, Davis, and Jung (1991) and Cuccia and Carnes (2001) find evidence about a positive

[14] Multiple studies underline possible implications of tax complexity. To name some, Collier et al. (2018) find an expected threat to economic prosperity, Budak and James (2018) propose an increase in tax planning or tax avoidance activities and Feldman, Katuščák, and Kawano (2016) state that tax complexity can cause confusion and lead to unintended behavioral responses by taxpayers.

[15] See figure 1 on p.5 of Hoppe et al. (2023) for an illustration of the different approaches on measuring tax complexity, divided into subcategories based on the numbers of facets of tax complexity and numbers of countries covered.

influence of tax complexity on tax compliance, indicating that a highly complex tax system fosters compliant taxpayer behavior. McKerchar (2005) find in an Australian setting, that tax professionals and taxpayers take more conservative positions in complex tax environments. McKerchar, Ingraham, and Karlinsky (2005) argue that complex tax systems increase perceived fairness by taxpayers and therefore positively influence compliance. Therefore, it remains an empirical question how CCPs in environments of different kinds of tax complexity impact tax compliance.

3 Hypothesis Development

As described in the previous chapter, the impact of a CCP on tax compliance is not clear. The OECD and the ICC encourage countries to enroll such programs for achieving higher levels of compliance by taxpayers but evaluation shows serious problems in a variety of countries.[16] Eberhartinger and Zieser (2021) define the relation between the authorities and the taxpayers as a principal-agent problem in which the tax authority as a stakeholder of the firm (Döllerer (1988), Moxter (1997), Euler (1998)) is the principal in the conflict (Reinganum and Wilde (1985)). Through the increased and earlier exchange of information in a cooperative compliance environment the information asymmetry is reduced and therefore potentially leads to higher compliance levels. The Slippery Slope Framework by Kirchler, Hoelzl, and Wahl (2008) define tax compliance (voluntary or ensured) by taxpayers to be established through two channels: Trust in the authorities and power of the authorities. Trust is defined as the perception of individuals and social groups that the tax authorities are benevolent and work beneficially.[17] Power is defined as to what extent a tax authority is able to enforce compliance, e.g., use of targeted audits, increase the audit probability, detect tax evasion etc.[18] Since CCPs are a signal of the tax authority to the taxpayers to be willing to cooperate in a trustful manner, the existence of a CCP marks a shift towards more trust in the sense of the slippery slope framework. This signal does not only influence eligible taxpayers, but may do spill over towards all taxpayers because trust signals from prosocial

[16] See, e.g., for the failure of the Swedish cooperative compliance program Hambre (2019) and Larsen (2019). Siglé et al. (2022) find mixed compliance effects of the CCP in the Netherlands for different types of taxes.

[17] Falsetta, Schafer, and Tsakumis (2024) support the notion of trust in institutions increasing taxpayer compliance by finding in an experimental study that taxpayers are likely to be more compliant if they support governmental spending.

[18] See Kirchler, Hoelzl, and Wahl (2008), p. 212.

institutions spread (Engl, Riedl, and Weber (2021), Fochmann, Müller, and Overesch (2021)). Therefore, I expect the increase in trust between tax authorities and taxpayers through the signaling effect of a CCP to positively influence tax compliance.

H1: Having a cooperative compliance program in place is positively associated with tax compliance.

The relation between tax complexity and tax compliance is discussed in the literature. Some studies state a positive association, others find a negative one.[19] Nevertheless, the majority of the literature underline the notion of complexity in the tax code fostering non-compliant behavior, especially through loopholes in the tax system (Milliron (1985), Saad (2014), Ulph (2015)). The slippery slope framework of Kirchler, Hoelzl, and Wahl (2008), as well as its extension (Gangl, Hofmann, and Kirchler (2015)), predict complexity in the tax system to lead to a decrease in trust in the authorities and therefore to a decreased voluntary compliance by taxpayers. Therefore, I expect overall tax complexity to be negatively associated with tax compliance.

H2: Tax complexity is negatively associated with tax compliance.

Following the argumentation of Eberhartinger and Zieser (2021), I see the relation between the tax authority and the taxpayer as a principal-agent relation with the tax authority being a stakeholder of the taxpayer and therefore both are having a natural interest in each other. With the increased and timelier exchange of information between authorities and taxpayers, CCPs decrease the information asymmetry in the principal-agent relation. Moreover, the slippery slope framework by Kirchler, Hoelzl, and Wahl (2008) identifies two possible reasons for compliant behavior by taxpayers: Perceived power of authorities or perceived trust in authorities. By building a horizontal monitoring environment, CCPs influence both dimensions of the slippery slope framework. In a CCP, the authorities and the taxpayers exchange information to a greater extent and timelier, the relation therefore becomes more trustful. Moreover, a shift in the quality and quantity of information provided to the tax authority ensures an increase in the perceived power of the authorities. As shown in the previous section, the majority of

[19] See chapter *Theoretical and institutional background* for an extensive discussion on the association between tax complexity and tax compliance.

studies find complexity as a possible contributing factor for non-compliance. Therefore, I expect tax complexity to attenuate the positive association of CCPs and tax compliance.

H3: Tax complexity attenuates the increase of tax compliance associated with cooperative compliance programs.

4 Research Design & Data

To test the aforementioned hypotheses H1-H3, I use OLS regressions with time-fixed-effects for the main analysis. The baseline model (I) includes the dependent variable *tax compliance* and the independent variables *complexity*, *cooperation,* and the interaction term *complexity* × *cooperation*. For testing the association between cooperation and tax compliance (H1), *complexity and complexity* × *cooperation* are excluded, for testing the association between tax complexity and tax compliance (H2) *cooperation* and *complexity* × *cooperation* are excluded. For the main analysis, investigating the interaction of cooperation and tax complexity, I apply the displayed baseline model (I) without exclusions.

$$\text{(I)} \qquad tax\ compliance_{j,t} =$$

$$\alpha_j + \beta_1\, complexity_{j,t} + \beta_2\, cooperation_{j,t} + \boldsymbol{\beta_3\, complexity_{j,t} \times cooperation_{j,t}} + controls + \varepsilon_{j,t}$$

complexity reflects the complexity of a tax system in a country j in a year t, measured by the TCI of Hoppe et al. (2023) in the main specification. I also use data from PwC and World Banks Paying Taxes study (PWC, World Bank Group (2020)) as alternative proxies for tax complexity in robustness tests. *cooperation* is an indicator variable reflecting if a CCP is in place or not for several years and countries. In the interaction term *complexity* × *cooperation,* the proxy for tax complexity is split into quintiles to distinguish between high and low complexity. It reflects an indicator variable that equals one if a country has a high level of tax complexity and a CCP in place in a certain year.

I also include country-level control variables. The control variables refer to the country-level controls used by Mendoza, Wielhouwer, and Kirchler (2017). In this set of controls, I include proxies for the corporate and personal income tax rate, the GDP per capita, the interest rate, the level of government transparency, the level of political risk, and the audit level of a country.[20] Deviating from Mendoza,

[20] See Table 2 for variable descriptions and data sources.

Wielhouwer, and Kirchler (2017), I do not include the variable *penalty*, because this data is not available in the IMF World Economic Outlook Database for the sample period of this study. As discussed in Mendoza, Wielhouwer, and Kirchler (2017) this set of control variables suits best for studies about audits, because the mentioned factors determine the shape, tone, and style of tax audits. CCPs, in the sense of this study, are a cooperative form of tax audits. Consequently, the mentioned control set is suitable for this study as well. Moreover, I apply a second set of control variables for testing the robustness of the results. Specifically, I use the World Governance Indicators (WGI) for controlling for the quality of the government of the countries in the sample. The WGI have very good data coverage throughout the sample period of this study. Additionally, I incorporated *GDP* in the second set of controls to controls for the size of the economy in the investigated countries.

This study utilizes several publicly accessible databases. First, the data of the TCI for the years 2016, 2018 and 2020 are used.[21] The tax complexity survey is conducted every second year, starting in 2016. The results reflect the perceived tax complexity of tax experts in up to 100 countries all around the world. In the study, tax complexity is defined as a feature of the tax system that is characterized by two sub-constructs: On the one hand, tax code complexity describes the difficulty of reading, understanding and complying with tax regulations that are affected by five complexity drivers. Therefore, the study identifies 15 internationally comparable tax regulations serving as dimensions for the tax code complexity. On the other hand, tax framework complexity describes the complexity that arises from the legislative and administrative processes and features within a tax system and is measured in five dimensions (Hoppe et al. (2023)). Since the underlying survey is conducted every second year, I impute the data for the missing years 2017 and 2019 with the mean value of the surrounding years. For testing H3, the TCI in the variable *complexity* is replaced by its subindices Tax Framework Complexity Index and Tax Code Complexity Index. When CCPs are implemented, they do not change the tax law itself, but its framework. By using the Tax Framework Complexity Index, which is included in the TCI, I am able to distinguish between complexity arising from a complex tax code and complexity arising from the surrounding framework. Since a CCP is changing the tax framework, I expect CCPs to have a greater (positive) compliance-effect in countries with a more complex tax framework. Nevertheless, a complex

[21] See https://taxcomplexity.org.

tax code has an impact on the outcome of a CCP, measured by increased tax compliance behavior. CCPs aim to decrease information asymmetries and therefore increase trust in and power of tax authorities. A highly complex tax code has the potential to disseminate the positive effects in two possible ways: First, a complex tax code can diminish the understanding of steps undertaken by the authorities, even in a CCP. If taxpayers do not understand the authorities' actions and the background of those actions, information asymmetries can hardly be reduced. Second, trust between the authorities and the taxpayers in the slippery slope framework relies on mutual understanding. Comprehension of the actions of the other party is harder to gain if the tax code is highly complex. The same holds for the perceived power of authorities. In countries with highly complex tax codes, it is hard for authorities to detect fraud on the side of taxpayers and therefore effectively enforce it.

Second, I use the data of the International Survey on Revenue Administration (ISORA).[22] The survey has been conducted jointly by the International Monetary Fund (IMF), the Inter-American Center of Tax Administrations (CIAT), the Intra-European Organisation of Tax Administrations (IOTA), and the Organisation for Economic Cooperation and Development (OECD). Besides assisting revenue administrations to improve their focus on performance measurement and reporting and to improve advice for the revenue administrations, one of the aims of the survey is to provide a database for cross-country analyses. Revenue administrations use an online platform (RA-FIT Data Collection Platform) for participating in the survey. Every year, revenue administrations from more than 50 countries participate in the survey. Besides country-level information on many topics, the dataset contains information about CCPs in the participating countries. Table 1 shows the covered countries with their yearly status of the cooperative compliance approach. A "1" indicates an active CCP in the respective year, a "0" indicates that there has not been such a program.

[Insert Table 1 about here]

Third, I use country-level data of the World Bank, the OECD, the European Commission, the IMF, PWC and KPMG for dependent and independent variables. Furthermore, I use data from firm-level data from Compustat Global to conduct country-averages of effective tax rates and compare them

[22] See https://data.rafit.org.

to the statutory corporate tax rates as an alternative proxy for non-compliance. See Table 2 for data sources and coverage.

[Insert Table 2 about here]

5 Results

As shown in Table 1, the final sample consists of 57 country observations from the sample period 2016-2020. This leads to a country-year panel with 285 observations. For dealing with missing values in the data and balancing the sample, some observations must be imputed. Table 3 displays summary statistics for all variables before and after imputation. Values are imputed in a two-step approach. First, in line with Mendoza, Wielhouwer, and Kirchler (2017), I impute values with the closest available observation per country, if available. Second, if there is no observation in a country at all, the values are imputed with the average value of all observations of the respective variables. The two-step imputation is not applied to the main variables *TaxEvasion*,[23] *CCP*, and *TaxComplexityIndex*. Since the underlying survey of the TCI is conducted every second year, I impute the data for the missing years 2017 and 2019 of the variable *TaxComplexityIndex* with the mean value of the adjacent years.[24]

[Insert Table 3 about here]

For testing hypothesis H1, I conduct OLS regressions with time-fixed-effects for three different proxies for tax compliance. As displayed in columns (1) and (3) of Table 4, I find support for the hypothesis that CCPs are significantly negatively associated with tax non-compliance if I use *TaxEvasion* and *Tax Gap* as a proxy for tax compliance. Although, the coefficient for the variable *CCP* is not statistically significant if controls are included. Moreover, the Audit Hit Rate is positively associated with CCPs (column (4)). *Audit Hit Rate* as a measure for tax compliance is used in Kotowski, Weisbach, and Zeckhauser (2014). *Audit Hit Rate* is measured by the number of audits where a tax adjustment was made divided by the total number of audits completed times 100. A positive coefficient reflects a higher

[23] The value for *TaxEvasion* for Cyprus in the year 2016 is not available. It is imputed with the mean value of *TaxEvasion* in Cyprus in the years 2017-2020. Imputation does not change results.

[24] Croatia, Estonia, Finland, Israel, Latvia, Mongolia, Saudi Arabia, and Slovenia are not reflected in each wave of the tax complexity survey. If it is not possible to impute values with the mean of adjacent years, i.e., if there is only one observation or if the observation for 2016 or 2020 is missing, values from the existing observations are adopted. This applies to Estonia, Mongolia, Saudi Arabia (only 2016 data) and Latvia (2016 data is missing). For Croatia, Finland, Israel, and Slovenia data is available for 2016 and 2020. These values act as the adjacent years.

level of non-compliance and therefore does not support the hypothesis. CCPs, in most cases, restrict the ability of the tax authority of an ex-post audit. CCPs substitute tax audits via the CCP inherent eyes-sight relation. This could be a reason for the positive coefficient for *Audit Hit Rate*, because CCP companies are not included in the audit data in CCP countries. The results can be confirmed using an alternative set of controls, including the World Governance Indicators and GDP (columns (5) to (7)). The results remain robust, except for the specification with *TaxEvasion* as the dependent variable. Since the used alternative dependent variables *Audit Hit Rate* and *Tax Gap* may suffer from small data coverage to a certain degree (see **Fehler! Verweisquelle konnte nicht gefunden werden.**), I stick to *TaxEvasion* as the proxy for tax compliance in the main analysis.

[Insert Table 4 about here]

I find significant evidence for the proposed association between tax complexity and tax compliance (H2). The results in Table 5 underline the notion that tax complexity has a negative association with tax compliance. Columns (1) to (3) show highly significant positive coefficients for association between *TaxComplexityIndex* and *TaxEvasion*. Column (1) displays the baseline result without controls, column (2) displays the main specification with the aforementioned set of controls, aligned with Mendoza, Wielhouwer, and Kirchler (2017). In column (3), the results with the alternative set of controls (World Governance Indicators and GDP). I also find a positive association here. Columns (4) to (6) display the results for an alternative proxy for tax complexity. When using the variable *Timehoursperyear* from the PWC and World Bank Paying Taxes study, the results are mixed. The baseline result indicates a positive association between tax complexity and tax compliance (column (4)). Nevertheless, the direction of the association changes to negative in the main control setting (column (5)) and vanishes in the alternative control setting. The variable *Timehoursperyear* measures the time for taxpayers to comply with their tax obligations. Since the complexity of a task is not directly measurable via the time need for completing the task,[25] the results of this proxy may be biased. For this reason, I stick to the TCI data as the main proxy for tax complexity in this study.

[Insert Table 5 about here]

[25] See Hoppe et al. (2023) for an extensive discussion on the measurement of tax complexity.

The main results, displayed in tables 5 to 7, refer to the relation between CCPs and tax complexity and the resulting association with tax compliance and therefore the main analysis in this study. Table 6 shows the interaction described in hypothesis 3. To test H3, I include the interaction term *CCP_TCI_high*, which indicates if a country *j* in a year *t* has a cooperative compliance program in place and has a Tax Complexity Index value in the highest quintile of the corresponding year. In column (1), using the main specification of control variables, I see a positive value for this indicator, but do not find statistical significance. So, I find no significant evidence for H3. This is not surprising, because the associations of *CCP* and *TaxComplexityIndex* with *TaxEvasion* are opposing, as shown in tables 3 and 4. This result becomes even more convincing when looking at the complexity of the tax code and the tax framework separately and interact it with *CCP*. The coefficient of the interaction term *CCP_TCCI_high*, indicating a country having a CCP in place and having a highly complex tax code (top quintile), shows a positive and highly statistically significant sign (column (2)). The opposite is true for the complexity of the tax framework (*CCP_TFCI_high*, column (3)). The coefficient of the interaction term shows a negative sign. This shows that countries with a highly complex tax framework that engage in a CCP show a significant decrease in *TaxEvasion.* Speaking in economic terms, I find that countries in the top quintile of the Tax Code Complexity Index that have a CCP in place 4.83 % more *TaxEvasion* than the control group. For countries in the top quintile of the Tax Framework Complexity Index with a CCP my results suggest 4.73 % less *TaxEvasion* than in the control group. These findings suggest that CCPs do not seem to be effective if the tax code is highly complex but can be a useful tool to enhance compliance in highly complex tax frameworks. Notably, in each specification of columns (1) to (3), *interest_rate* is positively associated with *TaxEvasion,* whereas *GDPpercapita* and *gov_trust* are negatively related to *TaxEvasion.* The associations displayed in columns (1) to (3) for the interaction terms *CCP_TCI_high* and *CCP_TFCI_high* persist in the alternative control variable setting. The coefficient for *CCP_TCCI_high* is still negative, but statistically insignificant (columns (4) to (6)). A possible reason for the insignificance of the variable *CCP_TCCI_high* might be the choice of the control variables set (World Governance Indicators and GDP). Especially, the variable *rqe* might influence the coefficient of *CCP_TCCI_high.* The variable *rqe* reflects the regulatory quality in a country and therefore will reflect the quality of the tax regulations, including its complexity. In untabulated results I

exclude all control variables and find a statistically significant positive coefficient for *CCP_TCCI_high*. The exclusive exclusion of the variable *rqe* increases both the coefficient and the significance of the coefficient for *CCP_TCCI_high* but the coefficient is still statistically insignificant on conventional levels.

[Insert Table 6 about here]

To test the robustness of the aforementioned main results displayed in Table 6, I conduct several robustness tests (Table 7). First, I interact CCP with alternative measures for tax complexity. The used alternative tax complexity measures are *Timehoursperyear* (*ttc*) and *ScorePayingtaxes* (*pts*) from PWC and World Banks Paying Taxes study (PWC, World Bank Group (2020)). *Timehoursperyear* measures the time taken to prepare, file and pay three major types of taxes and contributions: the corporate income tax, value added or sales tax and labor taxes, including payroll taxes and social contributions. A more complex tax system is expected to consume more time to comply with the resulting obligations. Therefore, a higher value of *Timehoursperyear* reflects a more complex tax system. *ScorePayingtaxes* reflects the simple average of the scores for each of the component indicators of the Paying Taxes study. Since the score, by its composition via multiple input factors, reflects the quality of a tax system, a high score of *ScorePayingtaxes* represents a less complex tax system. Both measures are not able to distinguish between the complexity of the tax code and tax framework but reflect a mixture of both complexity sources. The results in Table 7 underline the results found in the main analysis as displayed in Table 6.

[Insert Table 7 about here]

The interaction term *CCP_ttc_high* shows a positive association with *TaxEvasion* in each specification. Column (1) shows the baseline result without controls, columns (3) and (5) display the results with the two different sets of control variables. Notably, the result in column (5) is not statistically significant. The interaction term *CCP_pts_high* indicates a negative coefficient in each specification (columns (2), (4) and (6)). The results show that highly complex tax systems jeopardize the positive association of CCPs and tax compliance and can even reverse the association to more tax non-compliance.

There might be concerns about possible endogeneity between tax complexity and non-compliance and the likelihood of a country to engage in a CCP. One could think about countries with a high

level of tax complexity to be more likely to have a CCP in place to tackle the inherent complexity of their tax system. To alleviate these concerns, I test the correlation between the variables *CCP* and *Tax-ComplexityIndex* and display these results in Table 8. Table 8 also displays the pairwise correlations of the main variables (panel A) and the alternative set of control variables (panel B). I find no significant correlation between CCP and TCI, the value is relatively small (-0.064). Additionally, I also use a t-test and find no significant difference in the level of tax complexity between countries with a CCP and those without one. Therefore, I do not expect serious issues regarding endogeneity in this study.

[Insert Table 8 about here]

6 Robustness Firm Level

The aforementioned results, which fully rely on country-level data, might raise generalizability concerns because usually only a limited number of firms per country are eligible to participate in CCPs, and even if they meet the requirements, participation is voluntary. Moreover, the requirements for participation often are not fully transparent for the general public and tax administrations often do not publish which firms are actually participating.[26] The country-level data do not allow to account for the decision of the firms to participate. As stated before, I expect all companies in a country to be influenced by the signal of having a CCP in place because the tax authority will be perceived as more trustful and this signal will spill over to all firms in a country (Engl, Riedl, and Weber (2021), Fochmann, Müller, and Overesch (2021)). Nevertheless, I expect the signal of having a CCP in place to affect eligible companies more strongly, even if they decide to not participate in the program, because they receive a direct possibility to cooperate with the tax authority. Therefore, in the following I will make use of firm-level Compustat data provided by Wharton Research Data Services (WRDS)[27] to control for the different strengths of the signal to eligible and not eligible firms. I conduct single country studies to control for institutional peculiarities of the countries especially in regard to tax complexity.

[26] To grasp some insides into participation, Goslinga et al. (2021) investigate in a survey study in the Netherlands that roughly 18 % of the targeted firms participate in the program. They also find that larger firms, i.e. firms with more than 100 employees and sales greater than 50 million euros, are more likely to participate.

[27] https://wrds-www.wharton.upenn.edu/.

I investigate Austria, as an example for a country with a moderate complex tax code and Italy, a country which is characterized by highly complex tax code. In Table 9, I display the Tax Code Complexity and resulting quantiles, based on the worldwide comparison for these countries for the sample period 2016-2020.[28] Moreover, I report the mean code complexity values over the whole sample period and the respective quantiles. The first and fifth quantiles indicate whether a firm faces a high level of code complexity (first quintile) or a low level of code complexity (fifth quintile) or something in between (second, third, and forth quantile), compared to all other countries in the worldwide MNC Tax Complexity Survey. Table 9 demonstrates that Italy's complexity values consistently rank in the top quintile in every year of this observation. Austria's complexity values rank consistently in the fourth quintile, but in the third quintile in the average over the whole sample period. Therefore, I consider Italy to be a high tax code complex country and Austria to be a moderate tax complex country.

[Insert Table 9 about here]

I investigate the influence of the eligibility to participate in a CCP of firms in the respective countries on tax compliance, since I expect eligible firms to be more strongly affected by the CCP than non-eligible firms. I apply three different independent variables for measuring non-compliance; *GAAP ETR*, *Cash ETR*, and *Non-compliance*. Using different forms of effective tax rates to measure (non-)compliance is widely accepted in the literature (Dyreng et al. (2017)). The variable *Non-compliance* is defined as the difference between the statutory corporate income tax rate and the GAAP ETR. To control for outliers in the data, independent variables are winsorised by 5 % and 95 %. The indicator variables *CCP_AUT* and *CCP_ITA* indicate that a firm is eligible to participate in a CCP in the respective country in the given year. These variables are the main variables of interest. I include control variables for several firm characteristics based on Eberhartinger et al. (2021). See Table 10 for the description of the firm-level variables and Table 11 for descriptive statistics.

[Insert Table 10 about here]

[28] For an enhanced and interactive representation of the Tax Complexity Indices for up to 100 countries see https://taxcomplexity.org. The Global MNC Tax Complexity Survey is conducted biannually. For the requirements of this study, the missing data for the years 2017 and 2019 is imputed by the means of the complexity values of the surrounding years.

The criteria for joining a CCP in Austria are not publicly available from primary sources such as official government websites. Hence, the requirements firms have to meet for participation have to be deduced from secondary sources. According to Eberhartinger and Zieser (2021), Austrian firms must have sales greater than 40 million euros to be authorized to apply for the program.[29] In Italy, companies must have sales or revenues greater than 10 billion euros to participate in the CCP[30]. Applying these requirements to the dataset, this leads to 219 out of 261 firms eligible to participate in Austria and 29 out of 1,477 firms eligible to participate in Italy.

[Insert Table 11 about here]

In Table 12, I report the results of OLS regressions with year fixed effects based on firm-level Compustat panel data for the sample period 2016 to 2020. Columns (1) to (3) display the results for the moderate tax code complex country Austria and columns 4 to 6 display the results for the high tax code complex country Italy. Based on the country-level investigations in this study, I expect tax code complexity to be harmful for the compliance enhancement of the participation in a CCP. Therefore, from a theoretical standpoint, I expect the compliance enhancement of firm being eligible to participate in a CCP in Italy to disappear due to the complex tax code. Contrastingly, CCP-eligible firms in Austria should show relatively high levels of tax compliance. The results show that the CCP-eligible firms in Austria show higher levels of compliance, compared to the non-eligible firms. Columns (1) and (2) show significantly positive coefficients for *GAAP ETR* (0.0921) and *Cash ETR* (0.1609), column 3 reflects a significantly negative coefficient for *Non-compliance* (-0.0916). This translates into 3.39 (5.92) percentage points higher GAAP (Cash) ETRs and 3.37 percentage point lower non-compliance for firms being eligible for participation in the CCP in Austria. We do not find statistically significant results in any of the specifications in the Italian setting (columns (4) to (6)). This supports the notion of high tax code complexity being harmful for the positive association of CCPs and tax compliance, since Italian CCP-eligible firms, in contrast to CCP-eligible firms in Austria, do not show the positive association. This finding might be due to the excessively high tax code complexity companies face in Italy. Although,

[29] Eberhartinger and Zieser (2021) conduct an investigation for Austria, for the participants of the pilot project, which ended in 2019. A CCP was subsequently integrated into Austrian law.

[30] See https://www.agenziaentrate.gov.it/portale/web/english/nse/invest-in-italy/cooperative-compliance-program.

this investigation suffers from some limitation in the identification of firms participating in CCPs, the results point towards the signal of a trustful tax authority, send through the possibility for firms joining a CCP, seem to increase tax compliance. However, this seem to be not true for countries with high levels of tax code complexity.

[Insert Table 12 about here]

7 Conclusion

In this study I investigate whether, how and under what conditions tax complexity can jeopardize the signal of a CCP towards a trustful relationship sent by tax authorities. The results are mixed for the role of overall tax system complexity for the outcome of CCPs on taxpayer compliance in the main specification. At first glance, there is little to no association between tax complexity and tax compliance in cooperative compliance environments. When decomposing tax complexity into its components, I find significant evidence for the signal of cooperative compliance being not effective in countries with highly complex tax codes but to be effective in countries with highly complex tax frameworks. In countries which have a CCP in place and a high level of tax framework complexity (tax code complexity) tax evasion is less (more) pronounced. Single-country studies underline these results. I conduct analyses at the firm-level in Austria, a moderate tax code complex country and Italy, a high tax code complex country. Both countries offer CCPs to eligible firms. I find evidence for the compliance enhancement of CCP-eligible firms in Austria but not for those in Italy. CCP-eligible firms in Austria indicate a 3.39 (5.92) percentage points higher GAAP (Cash) ETRs and 3.37 percentage point lower non-compliance. The fact that the compliance enhancement is not present in Italy may be due to the excessively high complexity in Italy's tax code.

The study contributes to the literature in three ways: Firstly, it adds to the sparse literature on the effectiveness of CCPs by providing substantial insights on the association between CCPs and tax compliance. Secondly, it introduces new insides into the association between tax complexity and tax compliance. Thirdly, the study is the first to investigate the role of tax complexity in the tax system, the tax code and the tax framework in cooperative compliance environments and how it translates into tax compliance. It reveals that tax code complexity can undermine the compliance enhancement of CCPs. This study is particularly important for policymakers deciding about the implementation of a CCP in

their country or being concerned about the level of tax complexity in their country. Moreover, the study provides a starting point for further research on the effects and implications of CCPs and the behavioral responses of corporate taxpayers.

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Table 1: Status of cooperative compliance program per country

	2016	2017	2018	2019	2020
Argentina	0	0	0	0	1
Australia	1	1	1	1	1
Austria	1	1	1	1	1
Belgium	0	0	1	1	1
Brazil	0	0	0	0	0
Bulgaria	0	0	1	1	1
Canada	0	0	0	0	0
Chile	0	0	1	1	1
China	0	0	1	1	1
Colombia	0	0	0	0	1
Croatia	1	1	1	1	1
Cyprus	0	0	0	0	0
Czech Republic	0	0	0	0	0
Denmark	1	1	1	1	1
Estonia	0	0	0	0	0
Finland	1	1	1	1	1
France	0	0	1	1	1
Germany	0	0	0	0	0
Greece	0	0	0	0	0
Hong Kong	0	0	0	0	0
Hungary	0	0	1	1	1
India	0	0	1	1	1
Indonesia	0	0	1	1	1
Ireland	1	1	1	1	1
Israel	0	0	1	1	1
Italy	1	1	1	1	1
Japan	1	1	1	1	1
Kazakhstan	0	0	0	0	1
Latvia	1	1	1	1	1
Lithuania	0	0	1	1	1
Luxembourg	0	0	0	0	0
Malaysia	0	0	0	0	0
Mexico	0	0	1	1	1
Mongolia	0	0	0	0	1
Netherlands	1	1	1	1	1
New Zealand	1	1	1	1	1
Norway	1	1	1	1	1
Peru	0	0	1	1	1
Philippines	1	1	1	1	1
Poland	0	0	0	0	1
Portugal	0	0	1	1	1
Romania	0	0	0	0	0
Russia	1	1	1	1	1
Saudi Arabia	1	1	1	1	1
Singapore	1	1	1	1	1
Slovakia	0	0	1	1	1
Slovenia	1	1	1	1	1
South Africa	0	0	0	0	0

Table 1: Continued

	2016	2017	2018	2019	2020
Spain	1	1	1	1	1
Sweden	1	1	1	1	1
Switzerland	1	1	0	0	0
Taiwan	0	0	0	0	0
Thailand	0	0	0	0	0
Turkey	0	0	0	0	1
Ukraine	0	0	0	0	0
United Kingdom	1	1	1	1	1
United States	1	1	1	1	1
∑ CCP	22	22	35	35	41
∑ No CCP	35	35	22	22	16
∑ Total	57	57	57	57	57

Notes: This table presents an overview of the status of the cooperative compliance program in the 57 investigated countries per year (in place (1) or not (0)).

Table 2: Variable descriptions and data sources

Variable	Description	Data source	Coverage	Values	Note
		Dependent variables			
Tax Evasion	Tax Evasion survey measure	World Bank (Institute for Management & Development World Competitiveness Yearbook (WCY))	2016-2020	0-10	Original measure is turned upside down (10-TaxEvasion), so a high score reflects a lot of tax evasion (in line with Mendoza et al.).
Audit Hit Rate	Corporate income tax: No. of audits where a tax adjustment was made / No. of audits completed * 100	ISORA Database	2016-2019	0-100	Survey data.
Tax Gap	VAT Tax Gap (in million EUR) scaled by GDP (in million EUR)	European Commission (2020): Study and Reports on the VAT Gap in the EU-28 Member States, Table B6	2016-2018	Total numbers	
		Independent Variables			
CCP	Cooperative compliance program	ISORA Database	2016-2019	0,1	Indicator variable reflecting if a cooperative compliance program is in place (1) or not (0). No data for 2020 available yet. 2019 data imputed to 2020.
TaxComplexityIndex	Tax Complexity Index	taxcomplexity.org	2016, 2018, 2020	0-1	Values for missing years (2017 & 2019) are imputed with mean values of adjacent years.
Timehoursperyear (ttc)	Time to comply	PWC Paying Taxes	2016-2020	Total numbers (in hours)	The time to comply with tax laws measures the time taken to prepare, file and pay three major types of taxes and contributions: the corporate income tax, value added or sales tax and labor taxes, including payroll taxes and social contributions.
ScorePayingtaxes (pts)	Score-Paying taxes (DB17-20 methodology).	PWC Paying Taxes	2016-2020	0-100	The score for paying taxes is the simple average of the scores for each of the component indicators of the Paying Taxes study. The score is computed based on the methodology in the DB17-20 studies.

Table 2: Continued

Variable	Description	Data source	Coverage	Values	Note
CIT	Corporate Income Tax Rate	KPMG Services: Tax Tools & Resources	2016-2020	Percentage rates	
PIT	(Top) Personal Income Tax Rate	KPMG Services: Tax Tools & Resources	2016-2020	Percentage rates	
GDP	Gross domestic product	IMF	2016-2020	Current USD, in billion USD	
GDPpercapita	GDP per capita	IMF	2016-2020	Current USD	
interest_rate	Short term lending interest rate	World Bank & OECD	2016-2020	Percentage rates	
gov_transparency	Transparency of government policy is satisfactory	World Bank (Institute for Management & Development World Competitiveness Yearbook (WCY))	2016-2020	0-10	Survey data.
political_risk	The risk of political instability is very high	World Bank (Institute for Management & Development World Competitiveness Yearbook (WCY))	2016-2020	0-10	Survey data.
audit_level	audits_total / CIT_taxpayers_total * 100	OECD publication, data tables: Table A.162,	2016-2019	Total numbers	No data for 2020 available yet. 2019 data imputed to 2020.
vae	Voice and Accountability	World Bank	2016-2020	(-2.5)-2.5	Worldwide Governance Indicators.
pve	Political Stability and Absence of Violence/Terrorism	World Bank	2016-2020	(-2.5)-2.5	Worldwide Governance Indicators.
gee	Government Effectiveness	World Bank	2016-2020	(-2.5)-2.5	Worldwide Governance Indicators.
rqe	Regulatory Quality	World Bank	2016-2020	(-2.5)-2.5	Worldwide Governance Indicators.
rle	Rule of Law	World Bank	2016-2020	(-2.5)-2.5	Worldwide Governance Indicators.
cce	Control of Corruption	World Bank	2016-2020	(-2.5)-2.5	Worldwide Governance Indicators.

Notes: This table presents an overview of all dependent and independent variables used in the country-level analyses including variable descriptions, data sources, coverages, values, and additional notes.

Table 3: Summary statistics country-level

	Imputation	(1) N	(2) mean	(3) sd	(4) p5	(5) p95	(6) min	(7) max
TaxEvasion	Yes	285	5.342	1.664	2.581	7.706	2	8.438
TaxEvasion	No	284	5.341	1.667	2.581	7.706	2	8.438
ScaledTaxGap	Yes	285	0.0102	0.00601	0.00309	0.0253	0.000609	0.0402
ScaledTaxGap	No	80	0.0106	0.00904	0.00227	0.0330	0.000609	0.0402
CITaudithitrate	Yes	285	52.95	22.23	13.81	93.04	1.408	99.73
CITaudithitrate	No	120	51.91	25.43	10.21	94.52	1.408	99.73
CCP	Yes	285	0.523	0.500	0	1	0	1
CCP	No	285	0.523	0.500	0	1	0	1
TaxComplexityIndex	Yes	285	0.374	0.0689	0.243	0.474	0.207	0.534
TaxComplexityIndex	No	160	0.373	0.0682	0.249	0.479	0.207	0.534
Timehoursperyear (ttc)	YES	285	212.5	258.4	55	334	32	2,600
Timehoursperyear (ttc)	NO	280	212.5	260.7	55	340	32	2,600
ScorePayingtaxes (pts)	YES	285	78.82	11.55	57.94	91.14	34.14	99.71
ScorePayingtaxes (pts)	NO	280	78.82	11.65	57.93	91.31	34.14	99.71
audit_level	Yes	285	69.27	115.0	0.589	319.1	0.208	726.1
audit_level	No	225	69.27	129.5	0.568	372.0	0.208	726.1
interest_rate	Yes	285	8.670	7.411	2.603	19.00	0	67.25
interest_rate	No	143	9.177	10.30	2.089	29.39	0	67.25
CIT	Yes	285	21.81	3.718	16	29.50	9	34
CIT	No	244	21.81	3.230	16.50	28	9	34
PIT	Yes	285	34.87	13.92	10	55.79	0	57.34
PIT	No	285	34.87	13.92	10	55.79	0	57.34
GDP	Yes	285	1,321	3,179	30.50	4,931	11.15	21,373
GDP	No	285	1,321	3,179	30.50	4,931	11.15	21,373
GDPpercapita	Yes	285	29,338	23,972	3,606	75,594	1,733	118,467
GDPpercapita	No	285	29,338	23,972	3,606	75,594	1,733	118,467
gov_trust	Yes	285	45.40	13.20	23.76	67.95	13.25	85.00
gov_trust	No	188	45.27	16.07	20.66	75.52	13.25	85.00
vae	Yes	285	0.639	0.813	-1.188	1.562	-1.728	1.725
vae	No	275	0.639	0.827	-1.206	1.565	-1.728	1.725
pve	Yes	285	0.305	0.758	-0.987	1.326	-2.009	1.616
pve	No	275	0.305	0.772	-0.989	1.334	-2.009	1.616
gee	Yes	285	0.864	0.723	-0.217	1.949	-0.572	2.335
gee	No	275	0.864	0.736	-0.221	1.952	-0.572	2.335
rqe	Yes	285	0.883	0.734	-0.291	1.897	-0.567	2.206
rqe	No	275	0.883	0.747	-0.296	1.903	-0.567	2.206
rle	Yes	285	0.750	0.861	-0.556	1.931	-0.794	2.079
rle	No	275	0.750	0.877	-0.559	1.933	-0.794	2.079
cce	Yes	285	0.690	0.959	-0.784	2.170	-0.911	2.284
cce	No	275	0.690	0.977	-0.785	2.174	-0.911	2.284

Notes: This table presents summary statistics of all variables used in the country-level analyses. The table includes the number of observations (n), the mean value (mean), the standard deviation (sd), the 5 % and 95% percentiles (p5, p95) and the min and max value. All information is displayed for all variables with and without information.

Table 4: Association between cooperative compliance programs and tax compliance

	(1) *Tax Evasion*	(2) *Tax Evasion*	(3) *Tax Gap*	(4) *Audit Hit Rate*	(5) *Tax Evasion*	(6) *Tax Gap*	(7) *Audit Hit Rate*
CCP	-0.6500***	-0.0442	-0.0019**	6.0054**	0.3290**	-0.0013**	4.2208*
	(-3.10)	(-0.30)	(-2.36)	(2.90)	(2.80)	(-2.03)	(1.77)
audit_level		-0.0005	-0.0000***	-0.0581***			
		(-1.00)	(-4.20)	(-3.87)			
interest_rate		0.0421***	-0.0001***	0.3357***			
		(4.70)	(-3.75)	(2.71)			
CIT		-0.0056	0.0001	1.2052***			
		(-0.34)	(1.47)	(3.70)			
PIT		0.0039	-0.0001***	-0.3362***			
		(0.66)	(-3.64)	(-3.20)			
GDPpercapita		-0.0000***	-0.0000	0.0000			
		(-9.36)	(-0.14)	(0.54)			
gov_trust		-0.0247***	-0.0001***	-0.1725			
		(-3.51)	(-3.37)	(-1.41)			
vae					0.9574***	-0.0001	3.0863
					(8.42)	(-0.12)	(1.56)
pve					0.0629	0.0015***	1.5838
					(0.76)	(3.11)	(0.71)
gee					-0.5169*	-0.0069***	-17.7774**
					(-1.87)	(-2.77)	(-2.20)
rqe					0.0233	0.0026**	11.1671*
					(0.11)	(2.43)	(1.96)
rle					-0.4328	0.0066***	-16.6058**
					(-1.41)	(2.61)	(-2.01)
cce					-1.3055***	-0.0055***	8.8917*
					(-5.91)	(-3.94)	(1.72)
GDP					-0.0000	0.0000***	0.0026***
					(-1.59)	(3.23)	(8.28)
Constant	5.6952***	7.3465***	0.0204***	43.0616***	6.2023***	0.0127***	56.5350***
	(38.27)	(14.80)	(7.60)	(4.95)	(44.73)	(12.75)	(18.18)
Year FE	YES	YES	YES	YES	YES	YES	YES
Observations	285	285	285	285	285	285	285
Adj. R-sq	0.0236	0.6006	0.2123	0.1624	0.7232	0.1957	0.2203

Notes: This table presents the baseline estimates for the association between cooperative compliance programs and tax compliance for the dependent variables *Tax Evasion, Tax Gap* and *Audit Hit Rate* indicating tax compliance. *Tax Evasion* is a variable relying on survey data from the World Competitiveness Yearbook; a high score reflects high tax evasion. *Tax Gap* is the defined as the VAT tax gap in million EUR scaled by GDP. *Audit Hit Rate* is defined as the percentage of corporate income tax audits that resulted in a tax adjustment. *CCP* is an indicator variable reflecting if a cooperative compliance program is in place (1) or not (0). See Table 2 for variable definitions. ***, **, and * label statistical significance at 1%, 5% and 10% level, respectively. t statistics are given in parentheses and standard errors are heteroscedasticity robust. Year fixed-effects are included in all regressions.

Table 5: Association between tax complexity and tax compliance

	(1)	(2)	(3)	(4)	(5)	(6)
	TaxEvasion	*TaxEvasion*	*TaxEvasion*	*TaxEvasion*	*TaxEvasion*	*TaxEvasion*
TaxComplexityIndex	14.7891***	6.1154***	4.4994***			
	(13.70)	(5.78)	(3.32)			
Timehoursperyear				0.0018***	-0.0008***	-0.0003
				(3.71)	(-3.20)	(-1.56)
audit_level		-0.0007			-0.0007	
		(-1.38)			(-1.36)	
interest_rate		0.0336***			0.0591***	
		(3.48)			(5.83)	
CIT		-0.0236			-0.0021	
		(-1.58)			(-0.13)	
PIT		0.0008			0.0031	
		(0.14)			(0.53)	
GDPpercapita		-0.0000***			-0.0000***	
		(-8.03)			(-9.73)	
gov_trust		-0.0182***			-0.0275***	
		(-2.82)			(-4.07)	
vae			0.8483***			0.9560***
			(7.40)			(8.39)
pve			0.1011			0.0621
			(1.23)			(0.76)
gee			-0.0211			-0.5303**
			(-0.07)			(-1.99)
rqe			0.1391			-0.0340
			(0.65)			(-0.16)
rle			-0.6795**			-0.3529
			(-2.18)			(-1.17)
cce			-1.2496***			-1.3024***
			(-5.43)			(-5.74)
GDP			-0.0000***			-0.0000
			(-2.81)			(-0.81)
Constant	-0.1890	5.1138***	4.3915***	4.9515***	7.4494***	6.4347***
	(-0.45)	(8.61)	(7.22)	(35.70)	(15.16)	(43.60)
Year FE	YES	YES	YES	YES	YES	YES
Observations	285	285	285	285	285	285
Adj. R-sq	0.3688	0.6408	0.7341	0.0704	0.6099	0.7166

Notes: This table presents the baseline estimates for the association between tax complexity and tax compliance for the dependent variable *Tax Evasion* indicating tax compliance. *Tax Evasion* is a variable relying on survey data from the World Competitiveness Yearbook; a high score reflects high tax evasion. *TaxComplexityIndex* is indicating the complexity of the tax system. *Timehoursperyear* indicating the time to comply with tax laws. See Table 2 for variable definitions. ***, **, and * label statistical significance at 1%, 5% and 10% level, respectively. t statistics are given in parentheses and standard errors are heteroscedasticity robust. Year fixed-effects are included in all regressions.

Table 6: Interaction cooperative compliance program & high levels of tax complexity

	(1)	(2)	(3)	(4)	(5)	(6)
	TaxEvasion	*TaxEvasion*	*TaxEvasion*	*TaxEvasion*	*TaxEvasion*	*TaxEvasion*
CCP	-0.1771	-0.2664*	0.2003	0.2275*	0.1874	0.4387***
	(-1.20)	(-1.75)	(1.46)	(1.87)	(1.51)	(3.75)
Tax Complexity	5.3496***			4.0051***		
	(5.18)			(2.73)		
CCP_TCI_high	0.3400			0.0225		
	(1.47)			(0.12)		
TaxCodeComplexity		1.9085**			1.6944*	
		(2.35)			(1.69)	
CCP_TCCI_high		0.6980***			0.1949	
		(3.69)			(1.08)	
TaxFrameworkComplexity			9.2196***			6.5455***
			(7.31)			(4.64)
CCP_TFCI_high			-1.1923***			-0.8798***
			(-3.74)			(-3.15)
audit_level	-0.0008	-0.0004	-0.0006			
	(-1.52)	(-0.88)	(-1.54)			
interest_rate	0.0337***	0.0396***	0.0262**			
	(3.62)	(4.58)	(2.40)			
CIT	-0.0258*	-0.0190	-0.0132			
	(-1.74)	(-1.18)	(-0.88)			
PIT	0.0029	-0.0009	0.0088*			
	(0.51)	(-0.16)	(1.67)			
GDPpercapita	-0.0000***	-0.0000***	-0.0000***			
	(-8.15)	(-9.05)	(-7.72)			
gov_trust	-0.0192***	-0.0200***	-0.0149**			
	(-2.95)	(-3.06)	(-2.31)			
Constant	5.4739***	6.6607***	4.0209***	4.5133***	5.4033***	3.9220***
	(8.68)	(11.99)	(6.03)	(7.01)	(10.36)	(7.31)
Year FE	YES	YES	YES	YES	YES	YES
Alternative Controls	NO	NO	NO	YES	YES	YES
Observations	285	285	285	285	285	285
Adj. R-sq	0.6418	0.6343	0.6632	0.7361	0.7301	0.7465

Notes: This table presents the baseline estimates for the interaction of cooperative compliance programs & high levels of tax complexity for the dependent variable *Tax Evasion* indicating tax compliance. *Tax Evasion* is a variable relying on survey data from the World Competitiveness Yearbook; a high score reflects high tax evasion. *CCP* is an indicator variable that measures whether a cooperative compliance program is in place (1) or not (0). *Tax Complexity* indicates the complexity of the tax system. *CCP_TCI_high* is an interaction term indicating whether a country in a given year both operates a cooperative compliance program and has a Tax Complexity Index value in the highest quintile for that year. *TaxCodeComplexity* indicates the complexity of a tax system's code. *CCP_TCCI_high* indicates whether a country in a given year has both a CCP and a Tax Code Complexity Index value in the highest quintile for that year. *TaxFrameworkComplexity* measures the complexity arising from the legislative and administrative processes and features within a tax system. *CCP_TFCI_high* indicates whether a country in a given year has both a CCP and a Tax Framework Complexity Index value in the highest quintile for that year. The alternative controls set applied in columns (4) to (6) consists of the WGI (*vae*, *pve*, gee, *rqe*, *rle*, *cce*) and *GDP*. See Table 2 for variable definitions. ***, **, and * label statistical significance at 1%, 5% and 10% level, respectively. t statistics are given in parentheses and standard errors are heteroscedasticity robust. Year fixed-effects are included in all regressions.

Table 7: Interaction cooperative compliance program & high levels of tax complexity with alternative complexity measures

	(1)	(2)	(3)	(4)	(5)	(6)
	TaxEvasion	*TaxEvasion*	*TaxEvasion*	*TaxEvasion*	*TaxEvasion*	*TaxEvasion*
CCP	-0.8610***	-0.0987	-0.2678*	0.1122	0.2691**	0.3420***
	(-3.97)	(-0.54)	(-1.77)	(0.75)	(2.03)	(2.29)
Timehoursperyear	0.0013***		-0.0011***		-0.0003	
	(3.67)		(-4.09)		(-1.37)	
CCP_ttc_high	1.6134***		0.8650***		0.1635	
	(6.75)		(3.94)		(1.01)	
ScorePayingtaxes		-0.0749***		-0.0235**		-0.0169*
		(-8.21)		(-2.36)		(-1.78)
CCP_pts_high		-0.6526**		-0.4581**		-0.0399
		(-2.26)		(-2.33)		(-0.022)
audit_level			-0.0007	-0.0007		
			(-1.56)	(-1.46)		
interest_rate			0.0661***	0.3001***		
			(5.84)	(2.90)		
CIT			0.0021	-0.0367**		
			(0.15)	(-2.23)		
PIT			0.0010	0.0034		
			(0.16)	(0.58)		
GDPpercapita			-0.0000***	-0.0000***		
			(-8.82)	(-7.66)		
gov_trust			-0.0259***	-0.0214***		
			(-3.92)	(-3.11)		
Constant	5.3149***	11.3960***	7.2796***	9.6736***	6.3033***	7.3541***
	(29.46)	(15.86)	(15.34)	(9.46)	(37.86)	(10.95)
Year FE	YES	YES	YES	YES	YES	YES
Alternative Controls	NO	NO	NO	NO	YES	YES
Observations	285	285	285	285	285	285
Adj. R-sq	0.1742	0.3463	0.6312	0.6208	0.7231	0.7280

Notes: This table presents the estimates for the interaction of cooperative compliance programs & high levels of tax complexity for the dependent variable *Tax Evasion* indicating tax compliance with alternative measures for tax complexity. *Tax Evasion* is a variable relying on survey data from the World Competitiveness Yearbook; a high score reflects high tax evasion. *CCP* is an indicator variable that measures whether a cooperative compliance program is in place (1) or not (0). *Timehoursperyear* indicating the time to comply with tax laws. *CCP_ttc_high* indicates whether a country in a given year has both a CCP and a value for time to comply in the highest quintile for that year. *ScorePayingtaxes* reflects the simple average of the scores for each of the component indicators of the Paying Taxes study. *CCP_pts_high* indicates whether a country in a given year has both a CCP and a high score on the Paying Taxes study. The alternative controls set applied in columns (5) and (6) consists of the WGI (*vae*, *pve*, gee, *rqe*, *rle*, *cce*) and *GDP*. See Table 2 for variable definitions. ***, **, and * label statistical significance at 1%, 5% and 10% level, respectively. t statistics are given in parentheses and standard errors are heteroscedasticity robust. Year fixed-effects are included in all regressions.

Table 8: Pairwise correlations

Panel A: Main specification

	TaxEvasion	*CCP*	*TaxComplexity Index*	*audit_level*	*interest_rate*	*CIT*	*PIT*	*GDP percapita*	*gov_trust*
TaxEvasion	1.000								
CCP	-0.239*	1.000							
TaxComplexityIndex	0.611*	-0.064	1.000						
audit_level	-0.156*	0.145*	-0.036	1.000					
interest_rate	0.375*	-0.251*	0.319*	-0.070	1.000				
CIT	0.068	0.025	0.235*	-0.029	0.155*	1.000			
PIT	-0.302*	0.285*	-0.109	0.049	-0.106	0.299*	1.000		
GDPpercapita	-0.743*	0.266*	-0.533*	0.174*	-0.269*	-0.041	0.457*	1.000	
gov_trust	-0.537*	0.043	-0.447*	0.035	-0.160*	-0.062	0.179*	0.541*	1.000

Panel B: Alternative specification

	TaxEvasion	*CCP*	*TaxComplexity Index*	*vae*	*pve*	*gee*	*rqe*	*rle*	*cce*	*GDP*
TaxEvasion	1.000									
CCP	-0.239*	1.000								
TaxComplexityIndex	0.611*	-0.064	1.000							
vae	-0.363*	0.164*	-0.310*	1.000						
pve	-0.537*	0.229*	-0.468*	0.670*	1.000					
gee	-0.789*	0.350*	-0.618*	0.667*	0.744*	1.000				
rqe	-0.722*	0.296*	-0.581*	0.746*	0.762*	0.929*	1.000			
rle	-0.759*	0.326*	-0.557*	0.757*	0.784*	0.964*	0.948*	1.000		
cce	-0.783*	0.311*	-0.576*	0.737*	0.752*	0.954*	0.939*	0.972*	1.000	
GDP	-0.141*	0.161*	0.107	-0.118*	-0.080	0.102	0.008	0.057	0.044	1.000

Notes: This table presents pairwise person correlation coefficients for the main dependent variable *TaxEvasion* and all independent variables of the country-level analyses. Panel A (B) includes the variables of the main (alternative) specification. * label statistical significance at the 5% level.

Table 9: Tax Code Complexity per country

		Austria	Italy
2016	Tax Code Complexity Index	0.481	0.559
	Quantile	4	5
2017	Tax Code Complexity Index	0.479	0.574
	Quantile	4	5
2018	Tax Code Complexity Index	0.478	0.589
	Quantile	4	5
2019	Tax Code Complexity Index	0.480	0.591
	Quantile	4	5
2020	Tax Code Complexity Index	0.482	0.594
	Quantile	4	5
Mean	Tax Code Complexity Index	0.480	0.581
	Quantile	3	5

Notes: This table presents the complexity of the tax code and the respective quantile for Austria and Italy based on the Tax Complexity Index by Hoppe et al. (2021). The quantiles refer to a worldwide comparison on a yearly basis.

Table 10: Variable descriptions and data sources (firm-level)

Variable	Description	Data source	Coverage
	Independent variables		
GAAP ETR	Income taxes total (TXT) by pretax income (PI). Winsorized by 5 and 95%.	compustat	2016-2020
Cash ETR	Income taxes paid (TXPD) by pretax income (PI). Winsorized by 5 and 95%.	compustat	2016-2020
Non-compliance	Corporate statutory income tax rate minus ETR.	compustat	2016-2020
	Dependent variables		
Pre-Tax ROA	Pre-tax Income (PI) scaled by lagged total assets (AT).	compustat	2016-2020
Prior Loss	A dummy variable, equal to 1 if the firm had negative Pre-Tax ROA in the previous year and 0 otherwise.	compustat	2016-2020
Sales Growth	Percentage change in Sales (SALE) from year t-1 to year t.	compustat	2016-2020
PP&E	Net property, plant, and equipment (PP&ENT) scaled by lagged total assets (AT).	compustat	2016-2020
Leverage	Sum of long-term and short-term debt, scaled by lagged total assets, set to zero if missing.	compustat	2016-2020
R&D	R&D Expense in year t scaled by lagged total assets, set to zero if missing.	compustat	2016-2020
Cash	Cash and equivalents scaled by lagged total assets, set to zero if missing.	compustat	2016-2020
Ln Assets	Natural log of total assets.	compustat	2016-2020

Notes: This table presents an overview of all dependent and independent variables used in the firm-level analyses including variable descriptions, data sources, and coverages.

Table 11: Summary statistics firm-level

Panel A: Austria

	(1) N	(2) mean	(3) sd	(4) p5	(5) p95	(6) min	(7) max
GAAP ETR	261	0.177	0.153	-0.195	0.366	-0.195	0.531
Cash ETR	225	0.189	0.222	-0.151	0.586	-0.305	1.105
Non-compliance	261	0.0482	0.153	-0.146	0.418	-0.286	0.418
Pretax ROA	261	0.0346	0.149	-0.0936	0.135	-1.370	0.333
Prior Loss	261	0.103	0.305	0	1	0	1
Sales Growth	261	0.0462	0.315	-0.218	0.322	-1	3.880
PP & E	261	0.302	0.185	0.00117	0.579	0	0.804
Leverage	261	0.277	0.228	0	0.657	0	2.187
R & D	261	0.0347	0.0865	0	0.184	0	0.907
Cash	261	0.144	0.208	0.00238	0.390	0	2.284
Ln Assets	261	6.332	2.086	2.563	9.368	0.127	10.81
CCP_AUT	261	0.839	0.368	0	1	0	1

Panel B: Italy

	(1) N	(2) mean	(3) sd	(4) p5	(5) p95	(6) min	(7) max
GAAP ETR	1,477	0.207	0.190	-0.192	0.531	-0.195	0.531
Cash ETR	1,035	0.226	0.280	-0.273	0.768	-0.305	1.105
Non-compliance	1,477	0.0134	0.189	-0.286	0.417	-0.286	0.418
Pretax ROA	1,477	0.0349	0.220	-0.176	0.209	-1.498	5.515
Prior Loss	1,477	0.214	0.410	0	1	0	1
Sales Growth	1,477	2.568	74.16	-0.384	0.600	-1	2,788
PP & E	1,477	0.280	2.660	0	0.618	0	102.1
Leverage	1,477	0.353	1.624	0	0.681	0	61.91
R & D	1,477	0.0164	0.138	0	0.0627	0	5.069
Cash	1,477	0.176	0.381	0.00369	0.474	0	11.48
Ln Assets	1,477	5.302	2.202	2.093	9.100	-2.087	12.08
CCP_AUT	1,477	0.0196	0.139	0	0	0	1

Notes: This table presents summary statistics of all variables used in the firm-level analyses. The table includes the number of observations (n), the mean value (mean), the standard deviation (sd), the 5 % and 95% percentiles (p5, p95) and the min and max value

Table 12: Country studies in Austria & Italy

	Austria			**Italy**		
Tax Code Complexity		Moderate			High	
	(1)	(2)	(3)	(4)	(5)	(6)
	GAAP ETR	*Cash ETR*	*Non-compliance*	*GAAP ETR*	*Cash ETR*	*Non-compliance*
CCP_AUT	0.0921***	0.1609**	-0.0916***			
	[2.72]	[2.09]	[-2.73]			
CCP_ITA				0.0088	0.0146	-0.0080
				[0.25]	[0.25]	[-0.23]
Pre-Tax ROA	0.1052	-0.1059	-0.1037	0.1292***	0.1580	-0.1298***
	[1.19]	[-0.74]	[-1.19]	[4.62]	[1.59]	[-4.72]
Prior Loss	-0.0430	-0.2051***	0.0437	-0.1371***	-0.2152***	0.1378***
	[-1.35]	[-4.05]	[1.39]	[-11.21]	[-8.15]	[11.46]
Sales Growth	-0.0478	-0.0077	0.0483	0.0002**	-0.0003	-0.0001**
	[-1.61]	[-0.09]	[1.65]	[2.43]	[-0.46]	[-2.35]
PP&E	0.0184	-0.0163	-0.0185	-0.0097	-0.1129***	0.0089
	[0.30]	[-0.17]	[-0.30]	[-0.79]	[-2.67]	[0.74]
Leverage	-0.0853*	-0.1347	0.0856*	0.0172	0.0448	-0.0154
	[-1.73]	[-1.65]	[1.75]	[0.84]	[1.15]	[-0.77]
R&D	-0.4363**	-0.3786	0.4304**	-0.1686***	-0.2096	0.1678***
	[-2.24]	[-1.21]	[2.23]	[-3.89]	[-0.87]	[3.94]
Cash	0.2854***	0.1944*	-0.2829***	-0.0220	0.0241	0.0198
	[4.08]	[1.79]	[-4.08]	[-1.14]	[0.45]	[1.05]
Ln Assets	-0.0004	-0.0128	0.0001	0.0049**	0.0095**	-0.0049**
	[-0.07]	[-1.40]	[0.02]	[2.10]	[2.20]	[-2.15]
Constant	0.0971***	0.1795**	0.1289***	0.2090***	0.1999***	0.0118
	[3.06]	[2.26]	[4.10]	[14.55]	[6.72]	[0.83]
Year FE	YES	YES	YES	YES	YES	YES
Observations	261	225	261	1,477	1,035	1,477
Adj. R-sq	0.1591	0.0937	0.1618	0.1406	0.0815	0.1461

Notes: This table presents the estimates for the tax noncompliance of CCP-eligible firms in Austria and Italy for the dependent variables *ETR*, *Cash ETR* and *Non-compliance. ETR* indicates the actual tax burden on a company's earnings. *Cash ETR* indicates the actual cash outflow for tax purposes. *Non-compliance* indicates the extent to which a company's effective tax rate (ETR) deviates from the statutory corporate income tax rate. *CCP_AUT* indicates that a firm is eligible to participate in a cooperative compliance program in Austria for a given year. *CCP_ITA* indicates that a firm is eligible to participate in a cooperative compliance program in Italy for a given year. See Table 10 for variable definitions. ***, **, and * label statistical significance at 1%, 5% and 10% level, respectively. t statistics are given in parentheses and standard errors are heteroscedasticity robust. Year fixed-effects are included in all regressions.