UNIVERSITY OF LJUBLJANA
SCHOOL OF ECONOMICS AND BUSINESS

SVETLANA SABLJIĆ

THE EFFECT OF COUNTRY-BY-COUNTRY REPORTING ON TAX AGGRESSIVENESS IN BANKING SECTOR

DOCTORAL DISSERTATION

Ljubljana, 2022

AUTHORSHIP STATEMENT

The undersigned Svetlana Sabljić, a student at the University of Ljubljana, School of Economics and Business (hereafter: SEB), author of this written final work of studies with the title **"The Effect of Country-by-Country Reporting on Tax Aggressiveness in Banking Sector"**, prepared under the supervision of Assistant Professor Dr. Barbara Mörec.

D E C L A R E

1. this doctoral dissertation to be based on the results of my own research;
2. the printed form of this written final work of studies to be identical to its electronic form;
3. the text of this doctoral dissertation to be language edited and technically in adherence with the SEB's Technical Guidelines for Written Works, which means that I cited and/or quoted works and opinions of other authors in this doctoral dissertation in accordance with the SEB's Technical Guidelines for Written Works;
4. to be aware of the fact that plagiarism (in written or graphical form) is a criminal offence and can be prosecuted in accordance with the Criminal Code of the Republic of Slovenia;
5. to be aware of the consequences a proven plagiarism charge based on this doctoral dissertation could have for my status at the SEB LU in accordance with the relevant SEB LU Rules;
6. to have obtained all the necessary permits to use the data and works of other authors which are (in written or graphical form) referred to in this doctoral dissertation and to have clearly marked them;
7. to have acted in accordance with ethical principles during the preparation of this doctoral dissertation and to have, where necessary, obtained permission of the Ethics Committee;
8. my consent to use the electronic form of this doctoral dissertation for the detection of content similarity with other written works, using similarity detection software that is connected with the SEB LU Study Information System;
9. to transfer to the University of Ljubljana free of charge, non-exclusively, geographically and time-wise unlimited the right to save this doctoral dissertation in electronic form, the right of its reproduction, as well as the right to make this doctoral dissertation available to the public on the World Wide Web via the Repository of the University of Ljubljana; and
10. I give my consent for publication of my personal data included in this doctoral dissertation and in this declaration, when this doctoral dissertation is published.

Ljubljana, November 22, 2022 Author's signature: _________________________

ACKNOWLEDGEMENTS

Writing this dissertation proved to be an academically and professionally valuable experience. I am very thankful for the many people who supported me on my dissertation journey. Deep gratitude and appreciation for their support in writing the dissertation is due to all members of the dissertation committee: my mentor Assistant Professor Dr. Barbara Mörec for her comprehensive feedback on ways to improve the dissertation and for helping me to achieve my final goal; Prof. Dr. Sergeja Slapničar for her kind advice and excellent comments to improve both the dissertation and the tax aggressiveness model; Prof. Dr. Lidija Hauptman for her constructive comments which helped to make the study more theoretically and methodologically robust; and Prof. Dr. Lorena Mošnja Škare for her valuable insights concerning ways to improve the thesis. In addition, special thanks are due to the experts and professors who reviewed the doctoral study from theoretical and methodological aspects. I especially wish to express my great gratitude to Prof. Dr. Novak Kondić for his ongoing encouragement and moral support while writing the dissertation.

I would also like to express gratitude for the financial support received from the European Commission through the full scholarship for doctoral studies under the Erasmus Mundus project Green-Tech-WB. Special thanks are due to the School of Business and Economics, University of Ljubljana, for organising courses that were hugely important for improving my research and methodological skills. I am also indebted to the Faculty of Economics at the University of Banja Luka and to my colleagues there.

Finally, I thank for my parents for their unconditional love and constant trust they showed me during my doctoral studies. Special gratitude is also due to my husband and daughter for their understanding, love and energetic support; they acted as my driving motivation to complete the journey. I also wish to thank my family and friends for their support along the way. I dedicate this dissertation to my grandfather, Radosav, who has always been my greatest support on my educational path.

SUMMARY

This doctoral dissertation refers to the relationship between country-by-country reporting (CbCR) and the tax aggressiveness of multinational banks. In recent years, the tax aggressiveness of multinational companies (MNCs) has become the subject of public debate among experts, academics and international organisations. To prevent such aggressive tax practices, in 2013 the Organization for Economic Co-operation and Development (OECD) issued a global document called the Base Erosion and Profit Shifting Action Plan (BEPS) (OECD, 2013a), later supported by the European Commission and the G20. The European Commission claims that greater transparency is a crucial factor in regaining citizens' trust in the financial sector following the global financial crisis in 2008 (European Commission, 2013a). In this respect, the CbCR concept stands out as the most comprehensive approach as it increases tax transparency and resolves problems with aggressive tax avoidance activities enabled by international companies' legally permitted non-transparent reporting. The vital issue addressed while implementing of CbCR is whether it has a real impact on future aggressive tax avoidance behaviour of MNCs. Since 2014, pursuant to the European Union's Capital Requirements Directive IV (Article 89), CbCR has been mandatory for all financial institutions headquartered in the European Economic Area (EEA)[1] (Overesch & Wolff, 2018). This means that implementation of CbCR for the European banking industry offers a great opportunity to investigate the effectiveness of tax transparency on the tax aggressiveness of multinational banks. Such increased tax transparency impacts the setting of international business. Hence, the doctoral dissertation examines whether the new CbCR instrument is powerful enough to reduce the tax aggressiveness of multinational banks.

The main goal of the doctoral dissertation is to investigate the effects of greater tax transparency on tax aggressiveness using CbCR as the primary instrument of tax transparency for deterring and preventing tax avoidance by MNCs. By dividing EU countries into two distinct regions with respect to institutional and economic characteristics (Western and Eastern European countries), the tax aggressiveness of multinational banks domiciled in Western and Eastern European countries is also explored. To this end, the doctoral dissertation endeavours to answer four research questions:

RQ1. Does the implementation of CbCR reduce the tax aggressiveness of EU banks?
RQ2. Does the level of CbCR implementation (1. full implementation; 2. full non-implementation; 3. partial implementation) impact the tax aggressiveness of EU banks?
RQ3. What is the difference in the tax aggressiveness of banks domiciled in Western European countries and those in Eastern Europe?
RQ4. What is the role played by a country's tax system characteristics in banks' tax aggressiveness in Western European countries and those in Eastern Europe?

[1]The European Economic Area (EEA) comprises 28 EU member states, plus Norway, Liechtenstein and Iceland.

The doctoral dissertation provides empirical evidence of the tax aggressiveness of EU multinational banks having decreased in the post-implementation period (2014–2018). Further, the research examines the differences between the tax aggressiveness of multinational banks in countries in Western and Eastern Europe. The dissertation engages in an in-depth theoretical comparison of the institutional, economic and political characteristics of Western and Eastern Europe. Strong empirical evidence of higher mean effective tax rates (ETRs) of Western European banks is found, indicating that multinational banks in Western European countries are less engaged in aggressive tax avoidance activities than banks in countries in Eastern Europe. The results also show that multinational EU banks avoid taxes less in countries with higher levels of statutory tax rates and which have established a worldwide approach to taxation, while pointing to the existence of controlled foreign company (CFC) rules.

The dissertation presents empirical results that make a significant contribution to science, policymakers, the OECD, and the European Commission in terms of CbCR efficacy and the future development of anti-tax aggressiveness instruments. To the best of the author's knowledge, this is the first empirical study to examine the relationship between the level of implementation of the newly introduced CbCR and tax aggressiveness. Moreover, this is the first study to investigate effective tax rates (ETRs), cash effective tax rates (CASHETRs) and book-tax differences (BTDs) in order to fully report the differences between the tax aggressiveness of Western and Eastern European multinational banks.

Key words: tax aggressiveness, tax avoidance, tax transparency, country-by-country reporting, effective tax rate

POVZETEK

Pričujoča doktorska disertacija raziskuje odnos med poročanjem po (posameznih) državah (angl. Country-by-Country Reporting – CbCR) in davčno agresivnostjo multinacionalnih bank. V zadnjih letih je davčna agresivnost večnacionalnih družb postala predmet javne razprave med strokovnjaki, akademiki in mednarodnimi organizacijami. Da bi preprečila agresivno davčno načrtovanje, je OECD (angl. Organization for Economic Co-operation and Development) 2013 izdala globalni dokument BEPS (angl. Base Erosion and Profit Shifting Action Plan – BEPS) (OECD, 2013a), ki sta ga podprli tudi Evropska komisija in G20. Evropska komisija je menila da je povečana transparentnost ključni dejavnik pri ponovnem pridobivanju zaupanja državljanov v finančni sektor po svetovni finančni krizi leta 2008 (European Commission, 2013a). V tem primeru je koncept poročanja po državah najprimernejši pristop k povečevanju davčne transparentnosti in reševanju izzivov z agresivnim izogibanjem davkom, kar omogoča zakonsko dopuščeno netransparentno poročanje mednarodnih podjetij. Ključna točka, na katero se je osredotočila implementacija CbCR-ja, je vprašanje dejanskega vpliva na bodoče agresivno izogibanje davkom mednarodnih družb. Od leta 2014, v skladu z Direktivo o kapitalskih zahtevah (CRD IV, 89. člen), je CbCR obvezen za vse finančne institucije s sedežem v Evropskem gospodarskem prostoru (EEA)[2] (Overesch & Wolff, 2018). Implementacija CbCR za evropsko bančno industrijo torej predstavlja veliko priložnost za preučevanje učinkovitosti davčne transparentnosti glede davčne agresivnosti multinacionalnih bank. Takšna povišana davčna transparentnost vpliva tudi na mednarodno poslovanje. Zato pričujoče delo preučuje, ali je novo orodje CbCR dovolj močno, da zmanjša davčno agresivnost multinacionalnih bank.

Glavni cilj pričujoče doktorske disertacije je preučiti učinke povečane davčne transparentnosti na davčne agresivnosti z uporabo CbCR-ja kot glavnega orodja za davčno transparentnost, z namenom odvračanja in preprečevanja izogibanja davkom večnacionalnih družb. Poleg tega z razdelitvijo držav članic Evropske unije na dve ločeni regiji, glede na ekonomske in institucionalne lastnosti (zahodno- in vzhodnoevropske države), v delu raziskujemo tudi davčno agresivnost multinacionalnih bank s sedežem v zahodno- in vzhodnoevropskih državah. Za dosego omenjenih ciljev se doktorska disertacija osredotoča na naslednja raziskovalna vprašanja:

RV1. Ali implementacija CbCR-ja zmanjšuje davčno agresivnost bank v EU?
RV2. Ali stopnja implementacije CbCR-ja (1. popolna implementacija, 2. popolna neimplementacija, 3. delna implementacija) spremeni davčno agresivnost bank v EU?
RV3. Kakšna je razlika med davčno agresivnostjo bank s sedežem v vzhodno- in zahodnoevropskih državah?
RV4. Kakšna je vloga lastnosti državnega davčnega sistema pri davčni agresivnosti bank v zahodno- in vzhodnoevropskih državah?

[2] Evropski gospodarski prostor (EEA) vključuje 28 držav članic EU, kot tudi Norveško, Lihtenštajn in Islandijo.

Pričujoča disertacija podaja empirične dokaze zmanjšane davčne agresivnosti multinacionalnih bank v EU v postimplementacijskem obdobju (2014–2018). Poleg tega pričujoča raziskava preučuje tudi razlike med davčno agresivnostjo multinacionalnih bank v zahodno- in vzhodnoevropskih državah. Pričujoče delo ponuja poglobljeno teoretično primerjavo ekonomskih in institucionalne lastnosti zahodno- in vzhodnoevropskih držav. V disertaciji predložim tudi jasne dokaze višje srednje vrednosti dejanske efektivne davčne stopnje (ETRs) zahodnoevropskih bank, kar nakazuje, da so multinacionalne banke v zahodnoevropskih državah manj vpletene v agresivno izogibanje davkom kot banke v vzhodnoevropskih državah. Rezultati prav tako kažejo, da se multinacionalne banke redkeje izogibajo davkom v državah z višjo vrednostjo zakonske davčne stopnje, z utrjenim globalnim pristopom k obdavčitvi in z obstojem pravil tujih odvisnih družb (TOD).

Pričujoča disertacija daje empirične dokaze, ki predstavljajo viden doprinos k znanosti, in je u pomoč oblikovalcem politik, OECD-ju in Evropski komisiji pri presoji učinkovitosti orodja CbCR in bodočega razvoja orodij za boj proti davčni agresivnosti. Glede na dosedanje raziskave je to prva tovrstna empirična študija, ki preučuje odnose med stopnjo implementacije novo uvedenega orodja CbCR in davčno agresivnostjo. Hkrati gre za prvo tovrstno raziskavo, ki preučuje dejansko davčno stopnjo (ETRs), gotovinsko dejansko davčno stopnjo (CASHETRs) in razlike v knjiženih davkih (BTDs) z namenom celovitega poročanja o razlikah med davčno agresivnostjo zahodno- in vzhodnoevropskih multinacionalnih bank.

Ključne besede: davčna agresivnost, izogibanje davkom, davčna transparentnost, CbCR (poročanje po državah), dejanska davčna stopnja.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

LIST OF ABBREVIATIONS AND ACRONYMS

ATO	Australian Tax Office
BEPS	Base Erosion and Profit Shifting Action Plan
BIS	Bank for International Settlements
CbCR	Country-by-Country Reporting
CEO	Chief Executive Officer
CFC	Control Foreign Company
CRD IV	Capital Requirements Directive IV
CSR	Corporate Social Responsibility
EEA	European Economic Area
EITI	Extractive Industries Transparency Initiative
EU	European Union
EUAD	European Union Accounting (and Transparency) Directive
EY	Ernst&Young
FCS	Fully Conditional Specification
GAAP	Generally Accepted Auditing Principles
GAAR	General Anti-Avoidance Rule
GDP	Gross domestic product
IASB	International Accounting Standard Board
IBE	Institute of Business Ethics
IRS	International Reporting Standards
KPMG	Klynveld Peat Marwick Goerdeler
MDG	Millennium Development Goals
MEPS	Members of the European Parliament
MNC	Multinational company
OECD	Organization for Economic Co-operation and Development
PWYP	Publish What You Pay
R&D	Research and development
SEC	Securities and Exchange Commission
STR	Statutory Tax Rate
UN	United Nations

INTRODUCTION

Narrow Description of the Scientific Field

The aim of this doctoral dissertation is to explore the relationship between country-by-country reporting (CbCR) and the aggressive tax avoidance behaviour of multinational banks. To curb and control aggressive tax practices by multinational companies (MNCs), the OECD issued a global document called the Base Erosion and Profit Shifting Action Plan (BEPS) (OECD, 2013a). The European Commission and the G20 later supported the OECD's Action Plan that aimed to ensure that companies accrue and pay taxes in jurisdictions in which they carry out taxable profit activities. Therefore, large MNCs are required to prepare annual a Country-by-Country Report (CbC Report) containing information for every tax jurisdiction in which the group operates (OECD, 2015a). With the banking sector being the first to be required to publish a CbC Report, the doctoral dissertation examines the effects of the greater tax transparency of multinational banks. The main motivation for banks to limit their tax avoidance is to reduce reputational risk and assume social responsibility. According to the EU's Capital Requirements Directive IV (Article 89), CbCR became obligatory for all financial institutions headquartered in the 31 countries of the European Economic Area (EEA). Adoption of CbCR in the European banking sector thus presents a great opportunity to explore the effectiveness of CbCR for curbing the aggressive tax avoidance behaviour of multinational banks.

In the literature, aggressive tax planning activities are associated with organisational incentives (McGuire, Omer & Wilde, 2014; Gallemore & Labro, 2015; Higgins, Omer & Phillips, 2015), the shadow economy (Neck, Wächter & Schneider, 2012), corporate social responsibility (Keung, Qiang & Hao, 2013), tax compliance behaviour (Malik, Mihm & Timme, 2018), executive incentives (Chyz, 2013; Francis, Iftekhar, Wu & Yan, 2014), shareholder influence (Cheng, Huang, Yinghua & Stanfield, 2012) and audit-firm impact (McGuire, Omer & Wang, 2012). Several studies also found a significant relationship between reputational effects and corporate tax planning activities (Graham, Hanlon, Shevlin & Shroff, 2014; Hoopes, Robinson & Slemrod, 2018). Recent literature also provides substantial evidence that banks shift profits to low-tax countries in order to save on taxes (Merz & Overesch, 2016; Bouvatier, Capelle-Blancard & Delatte, 2017). Further, a number of studies document how MNCs use tax havens to reduce their tax burden and show that MNCs whose subsidiaries are located in tax havens significantly minimise their overall tax burden (Dyreng & Lindsey, 2009; Marckle & Shackelford, 2012). This doctoral dissertation extends the literature by analysing the further impact of CbCR implementation on the aggressive tax avoidance behaviour of MNCs. More specifically, the dissertation explores whether the level of CbCR implementation (1. full implementation; 2. full non-implementation; 3. partial implementation)[3] carried out by EU multinational banks impacts the level of their aggressive tax avoidance. To the best of the author's knowledge, this is the first empirical study to examine the relationship between the level of implementation of the newly introduced CbCR and aggressive tax avoidance (or tax aggressiveness).[4] The doctoral thesis is also the first study to make a distinction in aggressive tax avoidance between countries in the EU by dividing the sample into Western and Eastern Europe. This is additionally the first study to investigate effective tax rates (ETRs), cash effective tax rates (CASHETRs) and book-tax differences (BTDs) in order to fully report differences between the aggressive tax avoidance behaviour of Western and Eastern European banks.

While the literature has focused on analysing corporate tax avoidance in Europe or the USA as a whole (Thomsen & Watrin, 2018), it should be noted that every country has a different economic and institutional structure. By dividing the European sample into two distinct regions, this dissertation combines the concept of aggressive tax avoidance with various aspects of the economic and institutional development of the countries in which banks do business. The Western European region includes capitalist and economically more stable and developed countries with a liberal democracy, while the Eastern European region almost exclusively contains less developed transitional countries, i.e., ones previously ruled by communist regimes. The dissertation thus examines aggressive tax avoidance behaviour in various European countries and compares the aggressive tax avoidance behaviour of Western and Eastern European banks.

The Eastern European context is reflected in a strong emphasis on economic integration with the region of Western Europe via a rapid transition to a market economy and free trade (Hallerberg, 2012). A closer political bond with Western Europe is also presented. The active participation of foreign firms in the domestic economy, rapid economic and political integration helped Eastern Europe successfully overcome their transition problems (Lipton,

[3] CbCR implementation criteria are defined as follows:
Public CbCR as part of CRD IV must disclose: 1) names; 2) nature of the activities and geographic location; 3) turnover; 4) number of employees on a full-time equivalent basis; 5) pre-tax profit/loss; 6) tax on profit or loss (cash taxes paid); and 7) public subsidies received. If the CbC report of a bank contains all of this information and is publicly available on the bank's website, this means the bank has completely implemented CbCR (full CbCR implementation).
If the CbC report of a bank is not available on the bank's website and is not part of other available reports such as financial reports, annual reports, the Corporate Social Responsibility (CSR) report, and interim reports, this means that the bank has fully not implemented CbCR.
If a bank's CbC report has at least one item of missing information (typically, it was public subsidies received) and is available on the bank's website, this means the bank has partly implemented CbCR (partial CbCR implementation).

[4] The conceptual framework of empirical tax research employs different tax terms, i.e., tax avoidance (Cen, Maydew, Zhang & Zuo, 2017; Duan, Ding, Hou & Zhang, 2018; Kanagaretnam, Lee, Lim & Lobo, 2018), aggressive tax avoidance (Francis, Ren & Wu, 2017; Hasan, Hoi, Wu & Zhang, 2014), tax aggressiveness (Kanagaretnam, Lee, Lim & Lobo, 2016), and tax reporting aggressiveness (Frank, Lynch & Rego, 2009). Tax aggressiveness represents the aggressive end of tax avoidance practices (Francis, Iftekhar, Wu & Yan, 2014). Following prior research (Francis, Iftekhar, Wu & Yan, 2014; Hasan, Hoi, Wu & Zhang, 2014), the study presented here regards the terms "aggressive tax avoidance" and "tax aggressiveness" as being the same constructs.

1990). In addition, the political system of Western European countries is older and accompanied by the existence of political parties with long lineages (Hallerberg, 2012). There are also differences in the tax system characteristics of Western and Eastern European countries. The mentioned differences led to the conclusion that it was necessary to divide the sample into two distinct regions in order to analyse and compare the aggressive tax avoidance behaviour of banks from these different regions in Europe.

Purpose and Objectives

The **purpose** of the doctoral dissertation is to contribute to the global tax debate by examining the relationship between the newly introduced CbCR and tax aggressiveness, and to highlight the significance of the topic for tax authorities and other regulators concerned by the issue of MNCs' tax avoidance. The **goal** of the dissertation is to provide an in-depth analysis of the connection between tax aggressiveness and CbCR. Some additional sub-goals are also defined:

1. to define the constructs of tax accounting research while providing an in-depth theoretical analysis of tax avoidance, tax aggressiveness and CbCR;
2. to examine the relationship between tax aggressiveness and CSR, financial reporting and the stock market;
3. to define the relationship between CbCR and tax aggressiveness;
4. to investigate the differences between an EU country's tax system characteristics and their influence on its tax aggressiveness; and
5. to present the findings on the differences in tax aggressiveness between multinational banks per country.

Research questions (RQs) are defined to help clarify the specific issues of tax aggressiveness and their relationship with the implementation of CbCR:

RQ1. Does the implementation of CbCR reduce the tax aggressiveness of EU banks?
RQ2. Does the level of CbCR implementation (1. full implementation; 2. full non-implementation; 3. partial implementation) impact the tax aggressiveness of EU banks?
RQ3. What is the difference in the tax aggressiveness of banks domiciled in countries in Western Europe and those in Eastern Europe?
RQ4. What is the role played by a country's tax system characteristics in banks' tax aggressiveness in Western and Eastern European countries?

To evaluate the effect of CbCR and the level of its implementation on the tax aggressiveness of EU multinational banks, the following hypotheses are defined and empirically tested:

H1 The level of tax aggressiveness differs between banks domiciled in Western and Eastern European countries.
H2 The implementation of CbCR reduces the tax aggressiveness of EU banks.

H3 The level of CbCR implementation (1. full implementation; 2. full non-implementation; 3. partial implementation) impacts the tax aggressiveness of EU banks.

Scientific Research Methods

To ensure a deeper insight into the research topic, detailed theoretical and empirical analyses were conducted. The literature review entailed investigating the literature in the tax accounting field. The empirical analysis uses quantitative data.

The research design consists of three proxies for the dependent variable: effective tax rate (ETR), cash effective tax rate (CASHETR) and book-tax differences (BTD). The independent variables are defined as follows: country-level variables (statutory tax rate, a worldwide or a territorial taxation approach, gross domestic product, complexity of the tax system, and controlled foreign company rules), firm-level variables (bank size, pre-tax return on assets, leverage, intangible assets, capital adequacy, assets quality, liquidity, deposits), and CbCR_implementation.

The empirical analysis is conducted using a sample of the 195 largest EU banks by total assets (1,950 firm-year observations) from 25 European Union countries: Western European countries (i.e., banks domiciled in Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom) and Eastern European countries (banks domiciled in Bulgaria, Croatia, Czech Republic, Hungary, Lithuania, Poland, Romania, Slovak Republic, Slovenia). Country-level data were collected from several sources: the World Bank's database (gross domestic product), KPMG's corporate tax rate table (statutory tax rate), World Competitiveness Reports between 2009 and 2018 (complexity of the tax system and reporting strength), and related studies by Johansson, Skeie and Sorbe (2016) (controlled foreign company (CFC) rules) and Matheson, Perry and Veung (2013) (a worldwide or a territorial taxation approach). Financial statement data were gathered from the Fitch Connect database. Further, the unique CbC Reports database was collected manually from 200 websites of EU commercial banks that contain information about CbCR implementation stated in publicly disclosed CbC Reports, or CbC Reports published as part of other reports such as annual, financial, CSR reports, etc.

In the empirical analysis, to estimate the impact of CbCR implementation on the tax aggressiveness of EU multinational banks the difference-in-differences method (DID) using a fixed-effects panel data regression model is applied. DID is a statistical approach used to examine effects by comparing the pre- and post-implementation periods. The empirical analyses are performed using SPSS Statistics 24.0. Due to the categorical variables in the sample, Spearman's rho correlation is used to estimate the nonparametric correlation coefficients between the explanatory variables, while a collinearity estimation is also performed for the regression models. To test the sensitivity of the results, the methods explained below are used to estimate the missing values. To replicate the given results using the original fully available sample, Little's MCAR (Missing Completely At Random) method is used to test whether the data were missing in a completely random manner. Since the p-value was less than 0.05, the null hypothesis that the data were missing completely at random was rejected. This meant the imputation of the missing data could not be done using a conventional approach such as fitting the arithmetic mean. Only the following modern approaches could be used: EM algorithm, multiple imputations, fully conditional specification (FCS), etc. It was thus decided to use FCS, an iterative Markov chain Monte Carlo (MCMC) method.

Contribution to the Field of Tax Research

This doctoral dissertation makes several contributions to the literature. First, the study provides insight into the role of CbCR implementation on the tax aggressiveness of banks. Thus, this research provides important empirical results by examining whether the level of CbCR implementation (full implementation, full non-implementation, partial implementation) has an impact on the level of a bank's tax aggressiveness. Another contribution to the literature is estimating the cross-sectional determinants of tax aggressiveness across countries by demonstrating that CbCR is associated with a country's tax system characteristics. Second, a contribution is made to CbCR research by presenting empirical results derived from a unique hand-collected database in terms of the level of a bank's CbCR implementation. The doctoral dissertation thus contributes to the tax accounting literature by showing how distinct proxies of tax aggressiveness change with the CbCR implementation level.

Moreover, the dissertation contributes to the tax policy literature by providing strong empirical evidence on the tax avoidance of multinational banks domiciled in Western and Eastern European countries. The dissertation also contributes to the literature on aggressive tax avoidance behaviour by the banking sector. While Thomsen and Watrin (2018), Dyreng, Hoopes and Wilde (2016), and Markle and Shackelford (2012) focus on industrial firms, results are given in this dissertation for the banking sector. Moreover, these studies are extended by analysing the third proxy for aggressive tax avoidance, i.e., BTD. This doctoral research also extends the literature on political behaviour and political economy by providing an in-depth theoretical and empirical analysis of the distinction between Western and Eastern European countries. This is the first study to examine the link between the aggressive tax avoidance behaviour of banks domiciled in Western and Eastern Europe.

Finally, the doctoral dissertation may be of particular interest to tax authorities, the European Commission, the OECD, central banks and other regulators concerned with the widening gap between reported and taxable income. These findings hold important policy implications for the future development of CbCR and tax avoidance legislation.

Outline the contents

The first chapter of the doctoral dissertation presents a unifying conceptual framework of tax research terms including an in-depth study of tax planning, tax avoidance, tax aggressiveness, tax haven, tax burden, tax evasion, tax sheltering and tax transparency. This chapter also explains the social concept of tax research presented by CSR and tax morale. Further, the economic and institutional aspects of aggressive tax avoidance behaviour are explored by explaining the role of the market economy, politics, and tax system characteristics in aggressive tax avoidance behaviour. This chapter then focuses on CbCR, divided into subsections that refer to the institutional background of CbCR, the content of CbC reports, and the benefits and costs of CbCR.

The second chapter of the dissertation examines the literature on tax avoidance, tax aggressiveness, and CbCR. A literature review of tax avoidance is divided into two sections, one on tax avoidance by industrial firms and the other on tax avoidance by the banking sector. A literature review of tax aggressiveness follows, covering the relationship between tax aggressiveness and CSR, financial reporting, and the stock market. The next section presents a literature review on CbCR, focusing on general CbCR research, the impact of tax transparency on tax aggressiveness, and the impact of CbCR on tax aggressiveness.

The third chapter of the dissertation is devoted to the empirical study. This part explains the research methodology used in the dissertation. The thesis continues with the empirical models, measurement of the dependent variables, control variables, sample selection and descriptive statistics.

The fourth chapter presents empirical analysis of the impact of CbCR on tax aggressiveness. First, the empirical result of the comparison of the aggressive tax avoidance behaviour by Western and Eastern European banks is presented together with the development of aggressive tax avoidance behaviour by the banking sector in Western and Eastern European countries. Second, empirical results of the tax aggressiveness level in pre- and post-implementation period of CbCR are described. Third, findings concerning the relationship between tax aggressiveness and level of CbCR implementation (1. full implementation, 2. full-non implementation, 3. partial implementation) are presented. This chapter also includes a sensitivity analysis of the results.

The fifth chapter contains a discussion of the analysis and results. This chapter continues with the theoretical, methodological and practical contributions made by the dissertation. In addition, the limitations of the study and suggestions for future research are outlined. Finally, the sixth chapter concludes the dissertation, which is followed by references and appendices.

1 CONCEPTUAL FRAMEWORK FOR TAX ACCOUNTING RESEARCH

In this chapter, current literature on empirical tax accounting research is reviewed to provide a conceptual and definitional perspective on the constructs of corporate tax planning. The literature review highlights the need for a more detailed explanation of tax avoidance and tax aggressiveness. Therefore, in order to perform research analysis and define an empirical model, it is necessary to first develop a unifying conceptual framework for tax research concepts related to the topic of this study.

The scientific area on tax aggressiveness is very specific and implies that consistent definitions of tax-related terms do not exist. This lack of uniformity in tax-related definitions and implementation terms leads to the conclusion that it is appropriate to analyse the definitions of various authors and highlight the differences between certain tax constructs with a view to defining the most relevant definitions for this study. The main constructs in the field of empirical tax accounting research refer to the following terms: tax planning, tax avoidance, tax aggressiveness, tax haven, tax burden, tax evasion, tax sheltering and tax transparency. In addition, tax constructs are introduced that are closely related to the social aspects of tax research: Corporate Social Responsibility (CSR) and tax morale.

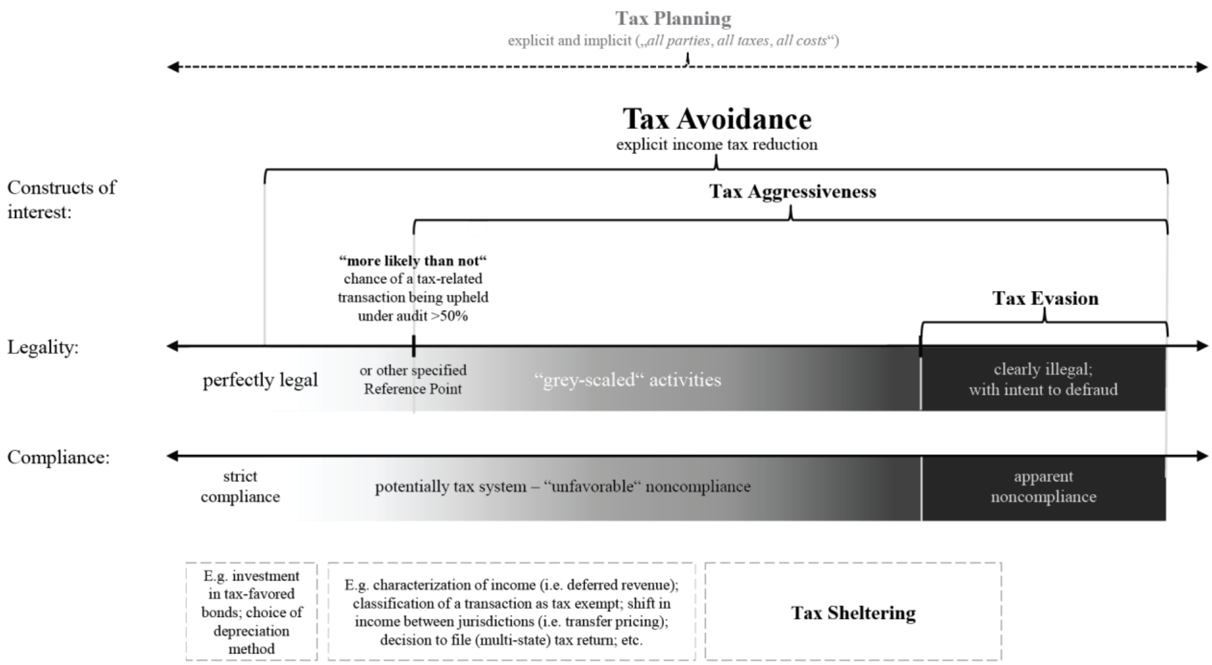
1.1 Concepts in tax accounting research

1.1.1 Tax planning

Tax planning is the most comprehensive construct and includes a wide range of planning strategies in the area of tax, meaning "all parties, all taxes, all costs" (Lietz, 2013). In terms of the definition for this provided by the Scholes-Wolfson framework, tax planning includes: (1) the tax positions of all contracting parties (multilateral approach); (2) all explicit and implicit taxes; and (3) all tax and non-tax costs. Apart from the role of explicit taxes affecting after-tax returns, the impact of implicit taxes (e.g., a reduction of pre-tax rates in the case of returns for tax-favoured investments) and non-tax costs (e.g., financial reporting costs, transaction costs, agency costs) also should not be neglected in tax policymaking and the effectiveness of corporate tax planning. Tax planning therefore always requires a holistic view of both explicit and implicit taxes, including non-tax costs.

Tax planning is established on the original global planning taxes approach and business strategy propounded by Scholes, Wolfson, Erickson, Maydew and Shevlin (2009). While providing a comprehensive conceptual framework, Lietz (2013) joins tax avoidance, tax aggressiveness, tax evasion and tax sheltering under the tax planning construct (Figure 1). Further, explicit tax planning constructs are presented in the legality and compliance dimension. The legality dimension varies from perfectly legal, across increasingly 'grey-scaled' activities, to clearly illegal actions with a tendency to defraud. The compliance dimension differs from strict compliance (e.g., depreciation method choice, investing of tax-favoured bonds), across 'unfavourable' noncompliance (e.g., deferred revenue, shifting income between jurisdictions/tax havens, transfer pricing, or setting up a special tax haven structure) through to outright noncompliance.

Figure 1: Conceptual framework for corporate tax planning



Source: *Lietz (2013)*

Figure 1 also shows that tax planning as an overarching construct is distinct from its subordinate constructs, i.e., tax avoidance, tax evasion and tax aggressiveness. These constructs are related to effective tax planning, which involves explicit taxes, and have the common intention of reducing the explicit tax burden of companies.

According to Lenz (2020), aggressive tax avoidance refers to the legal tax planning activities of management aimed at preventing the illegal abuse of tax laws. The next level is called abusive tax avoidance, characterised as illegal, *extra legem*, and completely contrary to the spirit of the law. Lenz (2020, p. 685) states: “The description of an aggressive tax avoidance act identifies the characteristics of the actor (e.g., rationality, dominant tax optimisation objective, intent to neglect the spirit of the law), the situation (e.g., loopholes in tax laws, latitude in interpretation of transfer pricing rules, conflicting international tax laws with respect to varying apportionment of equity and debt capital, varying apportionment of the site of the business activity), and direct consequences of a tax avoidance act (e.g., arrangement of transactions, costs and benefits of tax management, reactions of fiscal authorities).” In the scheme of Lenz (2020), aggressive tax avoidance is explained as probably a legal activity, *intra legem* and dominated by the letter of the law.

1.1.2 Tax avoidance

Tax avoidance has attracted increased public and scientific attention over the past few years. Evidence of tax avoidance actions by large MNCs can be seen in newspaper reports on a daily basis (e.g., Hakim, 2014; Thomsen & Watrin, 2018). For instance, the Independent[5] reported that Ikea's corporate taxes would be under investigation in the low tax-rate Luxembourg between 2006 and 2010. It also reported that the European Commission had required Amazon to pay EUR 250 million to the government of Luxembourg after finding that the tax deal in 2003 was regarded as an illegal state subsidy. The European Commission has also asked for further documentation from Apple about its latest tax structure as part of regulators' efforts to ensure that EUR 13 billion in back taxes is paid to Ireland. Thus, tax planning strategies (aimed at legally reducing a tax burden) may be seen as morally questionable, but not illegal (Lisowsky, 2010; Wilson, 2009). To fully understand the legal and illegal sides of tax activities, the concepts of tax avoidance, tax aggressiveness and tax evasion are explained in detail below.

Notwithstanding the increased attention to tax avoidance, little progress has been made in the conceptual and definitional development of the notion of tax avoidance. Tax avoidance is, roughly speaking, explicit tax cutting in any form (Hanlon & Heitzman, 2010; Lietz, 2013). Tax avoidance can be defined as an activity in which legal methods are used to reduce tax liability. The Oxford Centre for Business Taxation of the National Audit Office identifies three different tax avoidance types: (1) effective tax avoidance, which requires corrective action and changes to the law; (2) ineffective tax avoidance, which violates existing legislation; and (3) exploitation of tax legislation for one's own benefit (e.g., taking advantage of tax minimisation opportunities that are consistent with tax legislation and typically refer to tax breaks or tax abatements). In 2011, the United Nations Committee of Experts on International Cooperation in Tax Matters declared that tax avoidance rises when persons organise their tax-related affairs in order to take advantage of the ambiguities, weakness or inexactness in the law. Although the methods used are legal and without a fraudulent tendency, the results are considered incorrect or abusive. Further, in a broader sense, Freedman (2004, pp. 335–336) defined tax avoidance as "all arrangements to reduce, eliminate or defer a tax liability." In the Intermediaries Study, the OECD (2008) devoted considerable attention to requiring the disclosure of unacceptable tax avoidance, which it defined as the "aggressive tax planning" construct. According to the study, planning involves taking an arguable tax position that has unanticipated consequences for tax revenue and takes a position favourable to the taxpayer without clearly disclosing whether important items in the tax return comply with the law. For the purposes of this study, the term "aggressive tax avoidance" is therefore used to refer to unacceptable tax behaviour.

[5] See Ben Chapman (2017) https://www.independent.co.uk/news/business/news/ikea-tax-investigation-eu-commission-inter-margrethe-vestager-big-small-a8116321.html for more information on the taxes of MNCs.

Hanlon and Heitzman (2010, p. 27) state that: "... if tax avoidance represents a continuum of tax planning strategies where something like municipal bond investments are at one end (lower explicit tax, perfectly legal), then terms such as noncompliance, evasion, aggressiveness, and sheltering would be closer to the other end of the continuum." Hanlon and Heitzman (2010) interchangeably use the terms tax aggressiveness and aggressive tax avoidance, i.e., they regard them as synonyms. One may thus say that tax aggressiveness is aggressive and intensive tax avoidance. Following Hanlon and Heitzman (2010), the terms tax aggressiveness and aggressive tax avoidance are used in this dissertation as meaning the same constructs. Similarly, Lisowsky et al. (2013) recognised that tax avoidance actions are stated at that end of the continuum where legal support is weaker, where the aim is to create tax benefits which do not have economic consequences. Further, Zalasinski (2008) defined tax avoidance activities as decreases in tax liability using legal methods which are against the spirit of the law, but are not an issue for criminal punishment. In addition, the OECD stated its interpretation of the tax avoidance concept as follows: "A term that is difficult to define but which is generally used to describe the arrangement of a taxpayer's affairs that is intended to reduce his tax liability and that although the arrangement could be strictly legal it is usually in contradiction with the intent of the law it purports to follow. Cf. evasion".[6] Most importantly, the literature contains no common definitions for the tax avoidance concept (Hanlon & Heitzman, 2010). Similar to the OECD, the European Court of Justice also uses the term tax avoidance when referring to tax evasion. Some authors (e.g., Knuutinen, 2014; Dowling, 2014; Lanis & Richardson, 2012) argue that tax avoidance is an issue closely related to corporate social responsibility (CSR). Bird and Davis-Nozemack (2018) emphasise that the concept of tax avoidance represents socially irresponsible activities that are inconsistent with a company's commitment to society.

However, the phenomenon of tax avoidance is a wide and complex issue of importance for all jurisdictions and governments. Anti-tax avoidance activities have become the subject of the most tax legislation designed by all countries and regulators around the world. In mature economies like the USA, the UK, Canada, France, Germany and Austria, the General Anti-Avoidance Rule (GAAR) was introduced as an important tool to help regulators curb improper tax avoidance activities. The Australian government established the Tax Avoidance Taskforce as the central tool for ensuring that all companies and individuals pay the right amount of tax. The Taskforce investigates anyone who engages in tax avoidance practices. The importance of tax avoidance schemes is a big issue for the OECD and the EU that are working to prevent and stop tax avoidance activities through the Base Erosion and Profit Shifting (BEPS) Action Plan and the improved tax transparency required by CbCR. The terms tax transparency and CbCR are discussed further in the following chapters.

[6] To obtain a deeper insight into all tax research constructs, see https://www.oecd.org/ctp/glossaryoftaxterms.htm for more definitions.

1.1.3 Tax aggressiveness

Tax aggressiveness is a tax-motivated issue around the world and can be carried out by individuals or legal entities, especially large MNCs. Tax aggressiveness ranges from almost legal actions, across ‘grey’ activities through to clearly illegal actions with an intention to commit fraud. If the compliance is considered, tax aggressiveness can be both compliant and potentially unfavourable and seemingly non-compliant. According to Donohoe and Knechel (2014), tax aggressiveness is the claiming of tax benefits with relatively weak facts to maintain the benefits in the event of an audit by tax authorities. This definition includes illegal and highly continuous tax positions as well as some, but not all, tax avoidance (Hanlon & Heitzman, 2010). Further, tax aggressiveness can be considered in the light of tax planning activities (Lietz, 2013). As noted by the European Commission in its Recommendation on tax aggressiveness, the construct of tax aggressiveness is reflected “in taking advantage of the technicalities of a tax system or of mismatches between two or more tax systems for the purpose of reducing tax liability. This can lead to double deductions (e.g., the same cost is deducted both in the state of source and residence) and double non-taxation (e.g., income that is not taxed in the source state is exempt in the state of residence)”.

It is clear that no consensus has yet been reached, nor have any uniform definitions of tax planning constructs been accepted. Some authors refer to the terms tax avoidance and tax aggressiveness as the meaning same construct (e.g., Chen, Chen, Cheng & Shevlin, 2010; Huseynov & Klamm, 2012; Katz, Khan & Schmidt, 2013), while others draw a distinction between them, preferring one over the other depending on the specific research context (Balakrishnan, Blouin & Guay, 2012). The view taken in this dissertation is that the conceptual terms tax avoidance and tax aggressiveness overlap to some extent but cannot be regarded as identical. Oats and Tuck (2019) argue that the adjective “aggressive” describes unacceptable tax behaviour. Similarly, the OECD (2008) Intermediaries Study uses the term “aggressive tax planning” to denote unacceptable tax avoidance. The main difference between tax avoidance and aggressive tax avoidance (or tax aggressiveness) is precisely defined by Oats and Tuck (2019), who claim that the gaining of advantages from different options offered by the domestic tax low is reflected in “non-aggressive tax avoidance”, whereas taking advantage of the options offered by the tax low in different countries is defined as aggressive.

Since the definition and measurement of tax terms are very important for accounting and tax research, it was decided to opt for and use the construct of tax aggressiveness as it best matches the questions and requirements of this study. Unlike tax avoidance, tax aggressiveness is a concept that more precisely defines activities associated with abusive practices in the tax system. Further, tax aggressiveness is an arrangement that uses legitimate advantages to minimise tax liability through all activities (deduction, exemptions, rebates, allowances) in terms of minimising tax liabilities. Lietz (2013) illustrates the construct of tax aggressiveness on the lower level of tax avoidance. This level includes tax actions which are particularly ‘aggressive’ and require further investigation. Following the conceptual framework developed by Lietz (2013), it is also assumed that firms whose tax positions have the weakest legal safeguards are more likely to be among those with aggressive tax positions. Similarly, Frischmann, Shevlin and Wilson (2008) defined the notion of tax aggressiveness as an activity that adopts an important tax position reflected in weak facts in support of it. In what follows, the construct of aggressive tax avoidance is connected to the banking sector and the most appropriate definition for this study is established.

Empirical research on tax issues confronts banks’ involvement in the phenomena of tax avoidance and tax aggressiveness given that it is an essential intermediary in the tax planning of client companies. Recent studies analysing bank–client relationships show a direct link between banking services and corporate tax avoidance activities (Gallemore, Mayberry & Wilde, 2017; Chernykh & Mityakov, 2017; Francis, Ren & Wu, 2017). The active involvement of a bank is crucial because banks are directly related to the transactions that induce the tax planning opportunities obtainable by firms (e.g., lending, money transfer abroad, underwriting). Since there is a lack of empirical evidence on how banks evade taxes themselves, this research is interested in the connection between tax aggressiveness and banks’ activities. Following the conceptual framework of previous studies and the OECD’s work on tax matters, tax aggressiveness by banks is defined as the reduction of banks’ tax liabilities through instruments used to minimise pre-tax profits (e.g., profit shifting to low-tax rate territories, debt shifting, deposit-related activities, interest rate changes, conversion of long-term loans to short-term loans, etc.).

An MNC can be active in aggressive tax behaviour in several ways: transfer pricing manipulations, tax shelters or accounting manipulation that lead to minimal tax payments (Dowling, 2014; Taylor, Richardson & Lanis, 2015; Bird & Davis-Nozemack, 2018) and the establishment of subsidiaries located in tax havens or shelters with low or no tax (Barrera & Bustamante, 2018). Tax avoidance by MNCs is mostly debated as immoral behaviour in the following manner*:* “Avoiding tax and bending the rules of the tax system is not illegal unlike tax evasion; it is operating within the letter, but perhaps not the spirit, of the law. Businesses may therefore be complying with the law – but is it ethical?” (Foster Back, 2013). Similarly, the Institute of Business Ethics (IBE) describes tax avoidance behaviour as an ethical dilemma: “Avoiding tax by ‘bending’ the rules of the tax system is not illegal, but it is seen by many as operating within the letter rather than the spirit of the law. […] The issue falls into the realm of ethics because businesses have a choice about their approach to interpreting the law and hence paying taxes” (IBE, 2013). In summary, aggressive tax avoidance is described as part of aggressive legal explanations potentially perceptible in all areas that puts little attention on the will of a democratically legitimised legislature (Lenz, 2020).

Taxation is the key issue while analysing the contributions made by a corporation to the society in which it operates (Bird & Davis-Nozemack, 2018). A very detailed analysis of CSR and its relationship with taxation and tax aggressiveness is given in the study by Whait, Christ, Ortas and Burritt (2018). Tax aggressiveness is connected with strong tax avoidance as "the pursuit of transactions and structures in order to reduce tax responsibility in a manner that is contrary to the policy or spirit of government legislation" (Bird & Davis-Nozemack, 2018). Tax aggressiveness provides companies with the opportunity to benefit from their community involvement without incurring the associated costs (Amidu, Kwakye, Harvey & Yorke, 2016). Further, tax aggressiveness can be seen as against the spirit of the law, including activities in business motivated by tax reasons (Garbarino, 2011).

Tax aggressiveness falls in a grey area, but tends to be on the illegal end of the scale (Hoi, Wu & Zhang, 2013). Some authors recommend that tax aggressiveness be marked as a global sustainability problem because it has a devastating effect on common social and environmental resources (Bird & Davis-Nozemack, 2018). These authors suggest that tax issues should be implemented in companies' appraisal of their corporate sustainability. Another study claims that the issue of taxation should be placed within the CSR area, suggesting that tax aggressiveness leads to lost government revenue and puts an unfair burden on society, particularly in developing countries (Bracking, 2012). Since the corporate sector benefits from public infrastructure, it is only fair that companies pay a "fair share" of the costs entailed in developing society (Cabezas, 2015). Corporate citizenship leads to an obligation to pay taxes in the country where the company is located (Jenkins & Newell, 2013). However, other opinions claim that this is not fair and that companies contribute to society in many ways, such as with job creation and innovation. From this point of view, companies only need to comply with tax laws to be socially responsible (Gribnau, 2015). In addition, CSR Europe's tax project aims to increase the confidence of the public and policymakers regarding the aggressive tax avoidance activities and tax transparency of MNCs. The project's main objective is to increase the tax responsibility of companies by guiding them from tax transparency to responsible tax behaviour. In the project of CSR Europe, truly tax responsible companies are introduced as a strong preference and tendency of the project. In conclusion, the relationship between tax aggressiveness and CSR is under-researched. The dissertation contributes to these discussions by linking tax aggressiveness and CbCR as a tool for tax transparency, which is one of the main pillars of CSR.

1.1.4 Tax haven

Tax haven is a term used to describe countries whose tax regimes define provide low effective tax rates and offer various tax benefits for foreign investors. In the OECD's Glossary of Tax Terms, tax haven "refers to a country which imposes a low or no tax, and is used by corporations to avoid tax which otherwise would be payable in a high-tax country. According to OECD report, tax havens have the following key characteristics: 1) no or only nominal taxes, 2) lack of effective exchange of information, 3) lack of transparency in the operation of the legislative, legal or administrative provisions." Further, consensus on effective tax rates leads has seen the terms tax haven and offshore financial centre being treated synonymous in the academic landscape (Zucman, 2013). In addition, it is important to note that tax havens can also entail different types of secrecy, i.e., strong bank secrecy and legal entity secrecy. Strong bank secrecy is reflected in the inability to obtain information from banks or other financial institutions for tax official purposes. Similarly, secrecy pertaining to legal entities encompasses unavailability of information about companies, trusts, foundations or other legal entities, especially their beneficial owners (e.g., company shareholders, beneficiaries of a trust).

Tax havens are today under greater scrutiny and led to a number of policy responses in countries with higher tax rates (Jones, Temouri & Cobham, 2018). Various governments and civil society organisations have examined tax avoidance instruments in tax havens, notably following the Amazon, Google and Facebook tax scandals. Approximately 55% of US companies' foreign profits are taxed and located in tax havens (Zucman, 2014). According to the Tax Justice Network, 25% of US company profits are transferred to other counties/jurisdictions, creating a global revenue loss of around USD 130 billion annually (Cobham & Janský, 2018). Certainly, the importance of tax havens has been increasing along with globalisation and higher volumes of international investment. Gravelle (2009) argues that governments are losing income tax revenue from both individuals and corporations by way of income- and profit-shifting to low-tax countries, namely tax havens located all around the world, centrally concentrated in the regions of the Caribbean and Europe. A classification of European and non-European tax havens is presented in Table 1. Nevertheless, it should be recognised that tax havens and tax avoidance are very popular tax accounting constructs used by authors in their empirical investigations of the relationship between tax avoidance and tax haven firms/corporations (e.g., Gravelle, 2009; Jaafar & Thornton, 2015; Atwood & Lewellen, 2019). Fuest, Hugger and Neumeier (2022) establish that 87% of German MNCs report their profits in European tax havens (Ireland, Switzerland, Netherlands) and 82% of German MNCs have subsidiaries located in tax havens. Further, Aliprandi, Baraké and Chouc (2021) claim that European banks make considerable use of tax havens every year declaring that tax havens accounting for EUR 20 billion of their total profits. Zucman (2014) also show that 20% of US MNCs' profit is shifted to tax havens, while Tørsløv, Wier and Zucman (2018) argue that 40% of the MNCs' profits outside of their domiciled country are shifted to tax havens. Given that CbC Reports include information about revenues through related transactions with other affiliates within the same MNC group, these reports expose MNCs as they shift their profits to tax havens. Accordingly, the completeness of the financial data provided in CbC Reports enables an estimation of the total corporate profits that are sent to tax havens.

Table 1: List of tax havens

Category	Countries
European tax havens	Cyprus, Gibraltar, Ireland, Liechtenstein, Luxembourg, Malta, Netherlands, Switzerland
Non-European tax havens	Antigua and Barbuda, Bahamas, Bahrain, Barbados, Belize, Bermuda, British Virgin Islands, Cayman Islands, Cook Islands, Curacao, Gibraltar, Grenada, Guernsey, Hong Kong, Isle of Man, Jersey, Liberia, Montserrat, Panama, Saint Kitts and Nevis, Saint Vincent and the Grenadines, Singapore, Sint Maarten, Turks and Caicos Islands, Vanuatu

Source: *Fuest, Hugger & Neumeier (2022)*

1.1.5 Tax evasion

In their conceptual framework, Lietz (2013) presents tax avoidance and tax aggressiveness in the middle of the range of tax planning strategies, whereas tax evasion is located at its 'dark' end. Tax evasion can generally be defined as a clearly illegal and apparently noncompliant tax planning strategy. It is an action committed wilfully with the intention to engage in fraud. Tax evasion is illegal notwithstanding the result or motive for the evasion behaviour (Fisher, 2014). The conceptual framework of tax evasion shows that clear unlawfulness its dominant characteristic (Slemrod & Yitzhaki, 2002; Lietz, 2013).

The construct of tax sheltering is closely connected or overlaps with tax evasion. An important difference with tax sheltering compared to tax avoidance, tax aggressiveness and tax evasion is that sheltering is not viewed as forming a part of tax planning strategies (Figure 1). Tax sheltering is understood as special type of tax-related actions, including offshore tax advantages, deferred revenue, transfer prices, multi-state tax returns, tax exempt transactions, etc. This construct often considers legal loopholes and typically has aggressiveness as a central feature. Definitions of tax sheltering mostly refer to a tax-motivated misstatement of economic income with the goal of reducing overall tax payments (Bankman, 2004).

In addition to the mentioned differences between tax sheltering and tax evasion, it is necessary to draw analogies between tax avoidance and tax evasion. On one hand, tax evasion describes both illegal and unethical arrangements because it entails deception and concealment (Payne & Ralborn, 2018). On the other hand, tax avoidance is reflected in rational business planning, even if tax avoidance also takes advantage of a loophole in the law, which may be considered to morally questionable at a later stage. Thus, in this view, tax avoidance is conceptually different from the tax evasion construct in the legislation and in with respect to time. In relation to legislation, tax evasion is a violation of the law and can include fraudulent acts like intentional non-disclosure (Gribnau, 2015), while tax avoidance in a broader sense consists of legal activities that lead to lower tax liability. As concerns the aspect of time, tax evasion occurs after tax liability has crystallised as an *ex post* activity, whereas tax avoidance is an *ex ante* activity that happens before the tax liability is crystallised (Oats & Tuck, 2019). To conclude, tax avoidance and tax evasion constructs are considerably different tax behaviour activities.

1.1.6 Tax sheltering

In the tax avoidance literature, many authors have conducted studies on the corporate tax sheltering construct (e.g., Lisowsky, 2010; Chi, Huang & Sanchez, 2017). Taxpayers use a tax shelter as a way to minimise or reduce their taxable incomes and, in turn, their tax liabilities. Lisowsky, Robinson and Schmidt (2013, p. 8) consider the tax sheltering construct as the “most extreme subset of tax aggressiveness [...] which tests the bounds of legality.” In this view, tax sheltering is closely related to tax evasion. Lietz (2013) states that tax sheltering is more defined as particular explicit tax planning category that includes actions like the use of offshore tax havens and special legal vehicles (see Figure 1). The US Congress (1999) defined tax sheltering as actions for the purpose of avoiding tax by creating economic benefits without incurring any risk or economic loss. Tax sheltering thus refers to decreasing taxable income, which leads to a reduction of the tax payments of tax collecting entities, such as state and federal governments.

In general, tax sheltering includes investments given favourable tax treatment, retirement accounts, transactions and activities able to minimise taxable income. The activities taken in the area of tax sheltering can be legal or illegal, where their biggest difference from tax evasion actions is that the latter are clearly illegal. Governments often offer tax shelters to taxpayers like tax deductions (from a taxpayer’s taxable income), charitable contributions, mortgage interest deductions, student loan interest deductions, etc. Moreover, from the perspective of the public and policymakers, tax avoidance is seen as largely unfavourable to the tax system overall (Lietz, 2013). This means the tax sheltering conceptual construct is manifested as a more aggressive category of tax-motivated actions.

1.1.7 Tax burden

The OECD defines tax burden in its Glossary of Tax Terms as follows: “For public finance purposes the tax burden, or tax ratio, in a country is computed by taking the total tax payments for a particular fiscal year as a fraction or percentage of the Gross National Product (GNP) or national income for that year.” According to Celikay (2020), tax burden, measured as the tax ratio of total collected taxes levied to the total product in a given fiscal period, shows the impact of tax policy on the socioeconomic system. Tax burden is accordingly the total amount of taxes paid by a taxpayer, individual, company, business, or industry. One finds many reasons in the literature regarding why the tax burden has increased, such as globalisation, development of the socioeconomic structure, and development of the financial and organisational structure (Celikay, 2020).

The tax burden phenomenon can affect different factors, for instance private investments and government tax income. The direct impact of the tax burden on the level of investment is connected with the production technologies, effectiveness in using resources, and production capacity. The changed tax burden has meant higher government tax income, which can be used for stimulating economic activity (Abuselidze, 2012). Further, Nuta (2008) concludes that increasing taxes reduces resources available to the private sector for production while also lowering incentives to work, save and invest. Therefore, a higher statutory tax rate (STR) is associated with a higher level of tax avoidance, suggesting that private companies will pay less tax (Kanagaretnam, Lee, Lim & Lobo, 2018). Nevertheless, there are not enough empirical results and conclusions regarding the correlation between the size of government, the tax burden, and private investment. A question for future research is whether a large government and a high tax burden negatively impact private investment.

1.1.8 Tax transparency

While international trade was growing and the digital economy was developing rapidly, the requirement of tax transparency was expected to soon become widespread dramatically. In the broadest sense, tax transparency refers to a government's openness with respect to its tax rules, decision-making processes, agency interpretation, and enforcement practices (Blank, 2016). The Australian Tax Office (ATO) claimed that increased tax transparency would discourage MNCs from undertaking aggressive tax avoidance activities (ATO, 2013). Further, UK Prime Minister David Cameron argued that requirement for increased tax transparency was a strategy for combating tax evasion and preventing corruption (BBC, 2013). The OECD emphasises that tax transparency is being achieved through tax global coordination and collective efforts and will act as a strong instrument to bring an end to bank secrecy and to disrupt tax evasion. The EU believes that firms should be socially responsible to society while stakeholders claim that greater tax transparency is essential for achieving this and for regaining the trust of society (EY, 2013). Greater tax transparency may generally be seen as a powerful instrument for deterring, detecting and disrupting aggressive tax avoidance and tax evasion activities by MNCs.

The European Council (2022) remains committed to promoting and strengthening global tax transparency and tax fairness to prevent tax fraud and avoidance, where its main objectives are fair taxation and tax good governance mechanisms within EU countries and internationally. For this reason, the European Council (2022) adopted the "List of Non-Cooperative Countries for Tax Purposes" that includes the following countries: American Samoa, Fiji, Guam, Palau, Panama, Samoa, Trinidad and Tobago, US Virgin Islands, and

Vanuatu. The list includes countries that have not engaged in constructive dialogue with the EU on tax policy action or not met minimum tax reform requirements related to tax transparency and the implementation of international standards to prevent tax base erosion and profit shifting. In addition, in April 2022 KPMG published the Global Transfer Pricing Review, which among others presents the status of jurisdictions' implementation of the tax transparency package. This package is mandated by the OECD's Base Erosion and Profit Shifting Action Plan (BEPS) and consists of the CbCR, Master File, Local File and Transfer Pricing Documentation. When looking at EU countries, it is important to emphasise that countries in Western Europe (Austria, Germany, Ireland, Portugal and Netherlands) and Eastern Europe (Slovak Republic) have fully implemented all requirements of the tax transparency package. Other EU countries have fully adopted the CbCR requirements, albeit there are differences in the adoption of the other three parts of this package.

Recent academic literature on tax transparency contains a range of empirical studies. More precisely, Müller, Spengel and Vay (2020) present a framework of tax-related disclosure and a literature review of empirical evidence on tax transparency of corporations. Hoopes, Robinson and Slemrod (2018) show stock price declines around key dates related to the introduction of new public tax disclosure requirements. Further, Oats and Tuck (2019) examine two instruments that call for the greater tax transparency of MNC as follows: 1) CbCR, which secures information for tax authorities; and 2) UK requirements for large companies to publicly disclose their tax strategies. The mentioned authors emphasise the need to carefully weigh the dysfunctional effects before changing policies with the goal of requiring more tax transparency.

To conclude this section, it is important to note that tax transparency is a key mechanism of democratic governance which provides the public with knowledge of the tax legislation in terms of how it is enacted and applied (Schauer, 2011). In addition, tax transparency reporting empowers the public to monitor the tax authority, use the International Reporting Standards (IRS), and deter the agency from engaging in corruption or pursuing misguided policies (Lawrence, 2016). By considering the question of whether tax transparency is an effective mechanism for preventing and detecting aggressive tax avoidance, research was conducted on the effects of CbCR as a central instrument for accomplishing a higher level of tax disclosure.

1.2 Social concepts in tax research

To ensure a clear understanding of taxpayer behaviour, it is very useful to develop an in-depth explanation of the social perspective of tax research, which is closely related to the aspects of corporations' aggressive tax avoidance behaviour. Although paying taxes is a legal obligation for both companies and individuals, it is also an ethical, moral and social obligation. Corporations that manipulate tax laws and regulations with the goal of avoiding or reducing their payment of taxes ruin the society in which they do business, both ethically and financially. Aspects of the social and ethical norms surrounding the payment of taxes by companies and individuals vary among European countries. On one hand, countries in Western Europe are described as having power and trust in the tax authorities, a strong rule of law, considerable satisfaction with the government, high efficiency of the administration and control of corruption, which are seen as very important factors for positive taxpaying habits (Capasso, Cicatiello, De Simone, Gaeta & Mourão, 2021). On the other hand, the fall of communism caused the rapid collapse of the institutional structures of Eastern European countries, creating a vacuum in many of them characterised by high social costs, income inequality, and an increase in the poverty rate along with poor institutional conditions (Torgler, 2011). These factors are closely related to a lower motivation to pay taxes, i.e., low tax morale (Horodnic, 2018). This chapter details the social aspects of the tax construct presented by CSR and tax morale.

1.2.1 Corporate Social Responsibility (CSR)

The association between tax-related behaviour and CSR is particularly interesting, especially when tax avoidance is the central issue of academic debate. Many authors view tax avoidance as a socially irresponsible activity (Williams, 2007; Hasseldine & Morris, 2013). The OECD's Glossary of Tax Terms defines CSR as "business's contribution to sustainable development. Today, corporate behaviour must not only ensure returns to shareholders, wages to employees, and products and services to customers, it must also respond to societal and environmental concerns." Holme and Watts (2006) consider CSR to be the commitment of companies to behave ethically and morally, to contribute to economic development, and to improve society as a whole by ensuring the quality of life of workers and local communities. Thus, in its broadest sense, the CSR concept represents the approach taken by companies to conduct their business activities in a way that has an overall positive impact on society.

The literature shows several studies addressed the relationship between CSR performance and corporate tax avoidance (e.g., Hoi, Wu & Zhang, 2013; Lanis & Richardson, 2015), financial performance (e.g., Scholtens, 2008; Nelling & Webb, 2009) and earnings management (e.g., Kim, Park & Wier, 2012; Scholtens & Kang, 2013). Lanis and Richardson (2015) find that more socially responsible firms are engage in tax avoidance behaviour less often. It is important to note that firms which are socially responsible make an effort to respond to the concerns of other parties/stakeholders in their decisions, activities and polices. Hence, by paying their full taxes highly socially responsible firms would show they have ethical and community considerations in mind with the acknowledgement of their stakeholders and society. Further, Freedman (2003) and Landolf (2006) claim that paying corporate taxes holds important community and social implications given their role in creating the vital function of helping to finance the provision of public goods for society like public healthcare, education, public transportation, national defence, and law enforcement. In fact, given that firms are 'real-world' entities with obligations to society and the positive effects of firms' tax payments for society, the CSR perspective views the obligation of firms to pay their fair share of taxes as collected by the government according to the law in every country in which they operate (Freedman, 2003).

However, another important point here is that this theoretical explanation of the CSR concept would not be complete without considering the CSR–aggressive tax avoidance relationship. CSR is a socially responsible approach for restrain the damaging effects of aggressive tax avoidance on the economic prosperity of society. Williams (2007) argues that eliminating firms' tax aggressive behaviour would have several effects on society, namely it would: (1) promote respect for legal rules; (2) obstruct the two-tiered development of society in which some pays taxes while others do not; and (3) contribute to improved employee care and higher customer service standards, as associated with a legitimate economy. To conclude, CSR refers to firms' voluntary contribution to the sustainable development strategy that is in line with the legal requirements.

1.2.2 Tax morale

When considering and defining tax research concepts, tax morality should not be neglected as it is the crucial element on which all tax concepts are based. Tax morale is the willingness to pay taxes. According to the OECD (2019), tax morale may be defined as an essential aspect of the tax system that provides the intrinsic motivation to pay taxes. Luttmer and Singhal (2014) further define tax morale "as an umbrella term capturing nonpecuniary motivations for tax compliance as well as factors that fall outside the standard, expected utility framework." It is important to note that an improvement of tax morale characteristics can act as a major factor to increase revenues while making little effort. As a short-term solution, this could be done through behavioural economics approaches. As a long-term solution, it is necessary to complete further structural changes to create and enhance trust among taxpayers.

Several studies show that higher tax morale is associated with: (1) a high level of trust in public authorities (Horodnic, 2018): (2) less corruption (Williams & Martinez, 2014); and (3) a lower tax rate (Doerrenberg & Peichl, 2010). The level of tax morale is also lower in countries which have a higher power distance (Brink & Porcano, 2016). Alesina and Giuliano (2015) show that the level of tax morale is higher when persons are more sensitive to the inequity concept. Frey and Torgler (2007) describe how Eastern European countries have lower tax morale than Western European countries, which might be related to the institutional crisis experienced by former communist regimes.

Tax morale can be considered on two levels: corporate and individual. On the corporate level, it is important to note that tax morale from the corporate perspective refers to the decision of taxpayers (corporate management) about how much income will be declared to the tax authorities. More precisely, they can seek the benefits of tax evasion by paying lower tax even though they risk being punished and caught. There is a range of components related to tax morale that can impact businesses decision-making (e.g., socioeconomic aspects of a country's tax system, culture, religion, etc.). When tax morale is observed on the individual level, the OECD (2019) reports several significant findings: (1) women have a higher level of tax morale than men; (2) in Africa, people have lower tax morale; and (3) greater tax morale is also possessed by those with stronger trust in government. To conclude, there is a need for further research on the different components of tax morale and the effects on tax morale generally. The OECD (2019) also calls for more research on corporate and individual tax morale.

1.3 The economic and institutional aspects of tax research

To fully understand the tax avoidance behaviour of EU multinational banks, it is necessary to think about differences between the countries in which they operate. Considering the different institutional and economic structures of countries, two distinct regions are identified: Western Europe (Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom) and Eastern Europe (Bulgaria, Croatia, Czech Republic, Hungary, Lithuania, Poland, Romania, Slovak Republic, Slovenia). To fully comprehend the differences between the tax avoidance behaviour of Western and Eastern European countries, a distinction is made between the market economies and political systems of these regions. Further, the role of a country's tax system characteristics is highlighted along with the social perspective on the tax avoidance behaviour of multinational banks domiciled in these European regions.

1.3.1 The role of market economies and political systems in aggressive tax avoidance behaviour: Western vs Eastern Europe

Although the market economies of Western Europe have existed for several decades, the countries of Eastern Europe have only experienced a market economy for about two decades. Western European countries first experienced a common market and then the highly developed EU market. Countries in Eastern Europe were faced with the transition to a market economy accompanied by various economic and political conditions. This means it is important to note that the region of Central and Eastern Europe includes ten former communist countries (Hallerberg, 2012). The collapse of communist economies in Eastern Europe triggered the emergence of these countries' transition. The phenomenon of transition economies was followed by rapid institutional and economic changes. Schneider, Buehn and Montenegro (2010) argue that this transformation led to the emergence of undeclared work (e.g., tax avoidance, cash payment of wages, non-payment of income tax, and VAT). During communism, individuals did not pay taxes (Kornai, 1990) and also demonstrated strong resistance to paying taxes in the period of transition. According to Ferrer-i-Carbonell and Gërxhani (2016), a way of expressing such non-tax paying resistance is engagement in undeclared work. Thus, undeclared work has an important impact on tax avoidance on the both the employee and firm levels. Undeclared work can act as a strong motivation to engage in tax avoidance activities. Ferrer-i-Carbonell and Gërxhani (2016) state that the previous study of former communist and less developed countries showed two main reasons for engaging in undeclared work. First, the presence of an entrepreneurial spirit among participants to work informally due to the more flexible conditions, better wages, and lower taxes (Biles, 2009). Second, tax avoidance and undeclared work are questions of survival (Ahmad, 2008). From an employee perspective, this refers to the limited availability of jobs in the formal sector. Viewed from the firm perspective, it is expected that engaging in undeclared work may be related to paying less taxes.

The political system of Western Europe is also older and political parties there have long lineages. Eastern European political parties have different trajectories than Western European parties since it is possible that one dominant political party will lose most or all of its seats in the government during the following elections or disappear from the political scene entirely (Hallerberg, 2012). This political instability has led to disorganised public institutions, ineffective formal institutions, and unstable tax systems. The literature shows (Cummings, Martinez-Vazquez, McKee & Torgler, 2009; Friedman, Johnson, Kaufmann & Zoido-Lobaton, 2000) a positive relationship between ineffective formal institutions and tax avoidance. The central reason for this involves the fact that ineffective or corrupt formal institutions lead to a decline in civic virtuous and loyalty to public organisations. This then leads to low tax morale, subsequently followed by higher tax avoidance. Considering the differences between the previously mentioned political system and the economic development of Western and Eastern European countries, it is expected that the level of tax aggressiveness varies between the developed and capitalist countries of Western Europe and the Eastern European transition countries. This led to the first hypothesis:

H1 The level of tax aggressiveness differs between banks domiciled in Western and Eastern European countries.

1.3.2 The role of a country's tax system characteristics in aggressive tax avoidance behaviour: Western vs Eastern Europe

The difference between the tax systems of Western and Eastern European countries is based on the major fiscal phenomenon called the flat-tax system. While Eastern European countries have adopted a flat-tax regime, Western European countries are committed to progressive tax systems. Proponents of a flat-tax system contend that the main advantage is reduced tax avoidance and evasion. Replacing a complex tax system characterised by high tax rates with simpler tax regimes and low, flat tax rates lowers the motivation for tax avoidance activities (Laura-Liana & Carmen, 2009). The second advantage noted by flat-tax proponents is an increasing a flow of foreign investors. A low level of income tax acts as a major motivation for investment (where it is important to be profitable enough to give a return to the investor and cover the taxes). Further, the simplification of complex tax regimes can also play an important role as one of the essential factors for attracting foreign investors. From a social perspective, the biggest virtue of a flat-tax regime is its fairness. It does not matter how much money an individual earns or what kind of business they are doing, it will be taxed at the same percentage as everyone else (Laura-Liana & Carmen, 2009).

The implementation of flat-tax systems has seen different results. On one hand, it should be noted that flat-tax systems were introduced with the aim to reduce tax avoidance, simplify complex tax regimes, and improve economic efficiency by ensuring fewer tax distortions (Barrios, Ivaškaitė-Tamošiūnė, Maftei, Narazani & Varga, 2020). On the other hand, these authors point to some crucial disadvantages of flat-tax systems. A flat-tax system causes the poor to pay more taxes than rich citizens, meaning that it disrupts the social democratic principle whereby poorer citizens are helped and supported by richer ones in the name of the public good. According to Barrios, Ivaškaitė-Tamošiūnė, Maftei, Narazani and Varga (2020), Central and Eastern European countries that adopted flat-tax regimes generally have greater income inequality than the rest of the EU. Further, flat-tax regimes have brought the polarisation of nations' wealth, implying that flat-tax systems provide more financial resources that are used by rich citizens. Flat- tax arrangements also lead to unhealthy fiscal competition between countries, causing capital and workforces to migrate. This makes it necessary to differentiate between two groups of countries based on inequality, (relative) poverty, richness and polarisation indicators that are: (1) higher in the UK, Portugal, Spain and Greece; and (2) lower in Germany, Belgium, Austria and Luxembourg (Laura-Liana & Carmen, 2009). Remeta, Perret, Jareš and Brys (2015) also find a variety of flat-tax weaknesses such as lower levels of tax compliance and tax revenues as a consequence of high rates of social security contribution (SSC) and weak tax administration. Similarly, Filer, Hanousek, Lichard and Torosyan (2019) establish no significant impact of flat-tax reforms on the underreporting of income by analysing a large sample of transition countries. Contrary to these findings, Saavedra, Marcincin and Valachy (2007) show a positive effect of flat-tax reforms on tax compliance in Central and Eastern European countries.

1.4 The concept of country-by-country reporting (CbCR)

The aim of this section is to present the institutional background and development of CbCR, the need to implement CbCR and its importance for tax authorities, governments, the OECD and the EU. In addition, this section provides an overview of the content of CbCR and the advantages and disadvantages of implementing CbCR.

1.4.1 Institutional background of country-by-country reporting

1.4.1.1 CbCR under the Base Erosion and Profit Shifting Action Plan (BEPS)

To hinder aggressive tax practices, the OECD issued the global document named the Base Erosion and Profit Shifting Action Plan (BEPS) (OECD, 2013a). The European Commission and the G20 subsequently supported the OECD's action plan, which aimed to force companies to pay taxes in places/countries where their taxable profit activities were undertaken. Transparency in financial and tax reporting and the quality of the tax information disclosed are considered by many international institutions and initiatives to be the most efficient aspects for combating abusive tax-related actions. Transparency policy can be seen as efficient if the novelties disclosed (as part of the policy) have an impact on the decision-making and activities of both users and disclosers (Wojcik, 2012). In this regard, the concept of CbCR stands out as the most comprehensive approach.

CbCR for MNCs only targets companies with a consolidated turnover exceeding EUR 750 million. This threshold is set in the CbCR requirements to avoid administrative burden on smaller companies and their possible detriment, although it is estimated that it covers all large MNC groups with headquarters in the EU as well as outside the EU. Further, this substantial turnover includes very large companies that are more prone to tax aggressiveness due to their size and power. According to the OECD's calculations, the threshold value applies to companies controlling around 90% of MNCs' revenues worldwide. Finally, this threshold of EUR 750 million is consistent with the international stand and approach accepted by the G20 in the BEPS Action Plan of the OECD. A limit on the number of employees is not proposed due to the assumption that companies with few employees do not make a significant income for taxation.

The OECD's BEPS Action Plan has the goal of managing corporate tax avoidance and evasion via a number of measures. This action plan identifies the expansion of profit-shifting opportunities for MNCs as enabled by globalisation. In 2015, the Final BEPS report listed 15 instruments for the purpose of shrinking tax avoidance opportunities for MNCs. These measures are supposed to implement "coherence in domestic rules that affect cross-border activities, reinforcing substance requirements in the existing international standards, and improving transparency as well as certainty" (OECD, 2015b, p. 3). Further, the OECD/G20 Inclusive Framework on Base Erosion and Profit Shifting (Inclusive Framework) was created in order to involve more countries. All interested countries can approach the Inclusive Framework, but must commit themselves to a minimum of four BEPS standards. Implementation of the minimum standards is monitored and peer-reviewed. Since June 2019, 129 countries have joined the Inclusive Framework, involving the majority of the world's offshore financial centres.[7] An especially underlined task of the BEPS is the introduction of Non-public Country-by-Country Reporting for MNCs with revenues above EUR 750 million. The aim of this requirement for MNCs to report is to boost transparency and provide a basis for a high-level evaluation of tax risks. CbCR contains financial information and is important for analyses by tax authorities. The CbCR requirements were introduced in many countries from 2016, yet for some industries the publication of CbCR was already mandatory before 2016 (e.g., the resources and financial sectors).

In October 2021, the OECD (2021) and the G20 expanded the BEPS project by introducing the Two-Pillar Solution aimed at emphasising the tax challenges of digitalisation of the economy. The Two-Pillar Solution has been accepted by 140 countries and may be seen as a leading light in the international taxation of MNCs. On one hand, Pillar One redistributes some taxation rights for large MNCs from their home jurisdictions to the countries where their users and customers are located. The rules of Pillar One apply to MNCs with a global turnover of over EUR 20 billion. In this case, 25% of the remaining profit is defined as profit exceeding 10% of revenue and allocated to the countries where it was generated (OECD, 2021). On the other hand, the Two-Pillar Solution will introduce a global minimum corporate tax rate of 15% for companies in the scope[8] (OECD, 2021). This solution will be also applied to multinational groups with a turnover exceeding EUR 750 million. Most importantly, when a multinational group's subsidiary earns income in a low-tax country, the multinational group will have to pay an additional tax to raise the tax rate on that income to 15%. It is levied in the jurisdiction of the MNC's parent company.

1.4.1.2 CbCR under the Extractive Industries Transparency Initiative (EITI)

While the CbCR framework introduced by the BEPS project refers to MNCs from all industries, there are several other requirements regarding implementation of CbCR in the business sector by industry (e.g., the Extractive Industries Transparency Initiative (EITI) for resources companies). Other CbCR frameworks are less comprehensive than the OECD's BEPS, which refers to all industrial firms. The main requirements for MNCs are to ensure detailed and comprehensive information concerning their activities, capital and company structure by countries (CbCR for MNCs).

The EITI presents the oldest CbCR regulation for firms registered in the oil, gas and mineral resources industry (EITI, 2017). The primary aim of the EITI is to assure the open and responsible management of the extractive industries. According to the EITI standard, companies in the extractive industries are obliged to disclose information from the moment of extraction to the moment of revenue movement through the government and, finally, its

[7] A list of all Inclusive Framework members can be found here: http://www.oecd.org/tax/beps/inclusiveframework-on-beps-composition.pdf.

[8] The redistribution of profits under the Pillar One affects about 100 companies, the largest and most profitable ones.

public benefits. In this way, the EITI helps improve corporate governance and public stewardship, promote a better understanding of natural resources management, and provide the data for reforms to improve the transparency and accountability of the extractive industries. The EITI initiative is supported by collaboration between governments, companies and civil society in the 56 implementing countries.

1.4.1.3 CbCR under the EU's Capital Requirements Directive IV (CRD IV)

After the financial crisis in 2008, the Basel Committee on Banking Supervision announced a new framework for "global regulatory reforms" for the purpose to consolidate global capital and liquidity norms in order to promote a more resilient and flexible banking sector. The aim of these reforms was due to the need to improve banks' capability to absorb shocks from financial and economic stress and thereby decrease the spill-over risks from the financial to the real sector (Basel Committee on Banking Supervision, 2010). Other goals of the reforms planned by Basel III were improved risk management and corporate governance and greater transparency of banks' reporting and disclosures (Basel Committee on Banking Supervision, 2010). The EU has fulfilled the majority of requirements of Basel III stated in the Capital Requirements Directive (CRD IV, Directive 2013/36/EU) declared on 26 June 2013. The EU CRD IV Directive 2013/36/EU requires EU banks to prepare CbC Reports containing important financial information, including tax payments. CbC Reports must be both published and delivered to the tax authorities. The EU's CRD IV became obligatory in 2014 and required multinational financial companies in the EU to publicly disclose financial information, presenting tax payments on a country level (Joshi, Outslay & Persson, 2020).

Under Article 89 of the EU's CRD IV, banks (investment companies and credit institutions) with headquarters in the EU have been obliged to publish a Sectoral Country-by-Country Report since 2014. The CbCR of EU banks must entail a separate report or be within regular financial and annual reports. The content of the CbCR for banks includes names, nature of activities, geographical location, turnover, number of employees on a full-time basis, profit or loss before tax, tax on profit or loss, and public subsidies received. Banks with a turnover greater than EUR 750 million fall within the scope of both the CbCR for multinationals and the sectoral CbCR for banks. To avoid multiple reports, the EU Commission has proposed that large banks exceeding through the set threshold value continue to disclose only a CbC Report for banks according to sectoral requirements, albeit the report must include all operations of the group. There are no such requirements with Sectoral CbCR for non-EU banks doing business in the EU. For this reason, foreign banks have to publish a CbC Report for MNCs if their turnover is more than EUR 750 million.

Although analysis of profit shifting and tax havens usually focuses on corporations, banks are also considerably involved in facilitating tax and aggressive tax avoidance activities. Banks play an important role in tax avoidance, especially in tax havens, and have a substantial impact on tax transparency reporting and financial statement transparency more generally. The European Commission estimates that the tax savings of banks operating in tax havens range from EUR 1 billion to EUR 3.6 billion. Nevertheless, tax havens and international banking activities in this sense have hardly been a topic of academic research on taxes and tax-related activities due to the lack of information. Consequently, CbCR holds even greater importance for banks to increase trustworthiness and transparency in their financial statements and tax reporting.

CRD IV as introduced with a focus on improving the quality and quantity of capital in banks to strengthen the coverage of banks' capital base (liquidity and leverage). CRD IV became obligatory for EU member countries with an implementation deadline of 1 January 2014. The EU Commission expanded the Basel III changes regarding corporate governance. The Commission made it clear that it was necessary to have transparent principles and standards of corporate governance enforceable by institutions within institutions (CRD IV, 2011).

Nevertheless, parallel to the EU Commission's activities Members of the European Parliament (MEPS) brought out a plan that all entities meeting the requirements of CRD IV must publish specific information on a country-by-country basis after 1 January 2015. The CRD IV proposal (CRD IV, Article 89) obliges institutions to: "disclose on a consolidated basis the (a) the name(s), nature of activities and geographical location; (b) turnover; (c) number of employees on a full-time equivalent basis; (d) profit or loss before tax; (e) tax on profit or loss; and (f) public subsidies received. Institutions were required to disclose the information required by (a), (b), and (c) by July 1, 2014" (Joshi, Outslay & Persson, 2020). The aforementioned information is to be published as part of companies' annual reports.

In the academic literature one can find relevant studies regarding the impact of the CbCR initiative on risk-taking actions, including aggressive tax avoidance and profit shifting. First, empirical evidence on CbCR's impact on profit shifting is considered. Dyreng, Hoopes and Wilde (2016) explain how public information about the location of subsidiaries leads to a rise in tax payments of the mentioned companies. Joshi, Outslay and Persson (2020) report reduced profit shifting by financial companies due to CRD IV. On the other hand, non-financial affiliates of European banks have increased their profit shifting. The 2.5% rise in effective tax rates is seen in companies implementing CbCR compared to those not fulfilling this requirement (Overesch & Wolff, 2018). Companies with subsidiaries in European tax havens have a higher increase in effective tax rates than those without such subsidiaries (Overesch & Wolff, 2018). Second, aggressive tax avoidance is a very convenient method of profit shifting as it has been shown that international taxes paid by companies are very low while legal entities, including banks, are using the benefits of tax havens. Although it is very hard to calculate the precise amount of profits shifted, international companies and banks, by using tax aggressiveness, have been minimising taxes paid in different jurisdictions, i.e., internationally, on a regular basis. International entities are using several ways to transfer and shift their profits, with debt financing, transferred prices, intellectual property licensing and different international tax rates being especially important (Desai, Foley & Hines, 2004; Heckemeyer & Overesch, 2017). Aggressive tax avoidance and profit shifting cause large losses in tax revenues around the world. The academic community, practical research, reports, and the conclusions of various governmental and nongovernmental institutions state that transparency in financial and tax reporting is critical for reducing tax aggressiveness and profit shifting.

CbCR for banks became mandatory in 2015, which means the effects of CbCR on tax aggressiveness and transparency in financial reports can already be determined. The main contribution of CbCR for banks is the attaining of information about banks' international activities by geographic locations. "As expected by its proponents, CbCR is an effective tool to enhance transparency" (Bouvatier, Capelle-Blancard & Delatte, 2017, p. 32). For banks and other financial institutions, CbCR facilitates the understanding of all stakeholders of banks' structure, geographical locations, and activities. CbCR is considered to be irrefutable factor in regaining the trust of citizens and retaining or even increasing financial stability in financial crises. The European Commission puts "strong demands for banks to show greater accountability and increased transparency in their relations with the public" (Bouvatier, Capelle-Blancard & Delatte, 2017, p. 51). Moreover, it makes banks present their responsibility for their impact on the community and society since the tax transparency as well as the accuracy and adequacy of the taxes paid are seen as part of CSR. To conclude, tax transparency and CbCR can be ensured through the approach that transparency and disclosure are inevitable tools for forcing banks to meet their obligations and for showing accountability for their activities. This dissertation contributes to the literature in this area by analysing tax aggressiveness from a different angle by shedding light on the impact the introduction of CbCR has had on the tax-related activities of EU banks. The central objective of the dissertation is to investigate the effectiveness of CbCR implementation in reducing the tax aggressiveness of financial institutions.

1.4.2 Overview of Country-by-Country Reports

CbCR is intended to diminish or resolve problems with aggressive tax avoidance enabled by legally permitted non-transparent reporting by international companies. Such reporting demands that MNCs and financial institutions prepare annual statements that reveal information about where their economic activity is done and about the profits disclosed by multinational groups. CbCR is an accountability tool where accountability can positively impact several unequal power connections: principal–agent issues, the tax-avoiding of MNCs and the great inequality of lower-income countries in terms of tax rights dispensation (Knobel & Cobham, 2016). Reporting by countries is forcing companies to disclose information about their activities in different places and helps stakeholders to find out information concerning the social responsibility of international legal entities (Longhorn, Rahim & Sadiq, 2016). Other important goals of CbCR are to expand information about corporations' activities in specific locations and to draw a line between: (1) activity that results in the accruing of tax; and (2) the disclosure of taxable profit. The institutions and authorities responsible for taxation also see benefits from this kind of reporting in their tax valuations and estimates of tax shifting. CbCR overcomes the benefits of standard financial reports that can only fit a limited extent of relevant tax-related information.

CbCR should contain: "..certain information relating to global allocation of profits, the taxes paid, and certain indicators of the location of economic activity (tangible assets, number of employees and total employee expense) among country in which MNE group operates ... reporting of the capital and accumulated earnings as well as aggregate amounts of certain categories of payment and receipts between associated enterprises" (OECD, 2013, BEPS, Action 13). CbCR content is explained in the 2015 Final Report with a model template. The content of CbCR can be divided into three segments: (1) financial information concerning the global activities of MNCs: revenues (unrelated parties, related parties, total) profit (loss) before income tax, tax paid on income, accrued income tax, capital, accumulated earnings, number of employees, tangible assets other than cash and cash equivalents; (2) all subsidiaries of an MNC with its primary activities and tax jurisdictions in which the main activity is done; and (3) additional information and comments (OECD, 2015b, p. 29 f.). Other important information in CbCR includes the amount of revenue, profit or loss before income tax, income tax paid, income tax accrued, stated capital, accumulated earnings and the identification of every entity in the MNC group. The most significant goal of CbCR is to maximise the transparency of tax and similar payments made by international companies doing business in more than one destination/country. It is widely believed that CbCR is intended to facilitate the decision-making of many users involved in the business of a multinational entity and, at the same time, to provide for the accountability of multinational income for all subjects influenced by the business operations (Murphy, 2012).

By focusing on the goal and pursuit of fair taxation, the European Commission has been working to try to ensure that companies pay adequate and fair taxes in the jurisdiction/country in which they do business. Aggressive tax avoidance has become an important part of these endeavours in the EU. The public's concern with the justness of the tax system is opening new debates concerning ways to combat aggressive tax avoidance. The European Commission has sought to respond to public concerns about tax measures by combining the transparency of company accounts and the amount of tax paid with the need to protect the competitiveness of EU companies. CbCR for MNCs was introduced as a mechanism for achieving the public transparency of taxes, seen as part of CSR. Tax transparency is considered an important tool for fighting aggressive tax avoidance and tax evasion. The first step has been already taken, consisting of cooperation between tax authorities and the exchange of information about MNCs. The next step is to publicly disclose all financial information regarding the taxes paid in the country where the company makes the profit. In this matter, public CbCR is an agenda which specifies the facts and figures that large MNCs must provide to assure that the requested public transparency of

MNCs’ income taxes paid is accomplished. Opportunities for aggressive tax avoidance and tax evasion are detected specifically in tax jurisdictions with loose respect for international good governance tax standards. For the MNCs doing business in such jurisdictions, there are particular transparency requests in order to achieve adequate country-by-country disclosure. Generally viewed, the main aim of BEPS CbCR is to ensure tax authorities and administrations have a high-level overview of the activities and tax risks of MNC groups (OECD, 2017). Improved tax transparency through the CbCR mechanism is an important step towards harmonisation of the international corporate tax system.

According to the European Commission (2016), MNCs are required to submit a CbC Report to their tax authority and to the public. In terms of the report’s content, the information that must be provided to the public is less detailed than the tax data that is provided confidentially to the tax authorities. CbCR should be audited by an auditing firm along with the financial statements (European Commission, 2016). Tax authorities and governments are presented with 12 items of financial and tax information, while the public CbCR contains 7 items of financial and tax information. The European Commission (2016) emphasises that tax authorities will receive detailed data on EU companies operating in tax havens The European Commission (2016) adds that EU citizens need information on where EU companies pay taxes and whether companies operating in the EU also operate in tax havens.

1.4.3 The benefits of country-by-country reporting

As an innovative reporting and accounting form, CbCR demands the presentation of financial statements profit and loss by every jurisdiction in which an international corporation does business. In introducing CbCR, the opinion prevailed that this form of disclosure would meet the many needs of financial statements’ users and MNCs’ shareholders. The prime reason for introducing CbCR is based on the claim this is a method for making MNCs pay taxes in real amounts, corresponding to the activity of a company and its use of the public infrastructure of countries (Evers, Meier & Spengel, 2014). The idea of CbCR lies in exposing the tax-transfer and mispricing undertaken by MNCs. CbCR is a very important instrument for disclosing MNCs’ value chains and their economic actions and surroundings (Fehling, 2015). Tax authorities also may make the most of CbCR by having an insight into profit allocation and profit payments (Cockfiled & MacArthur, 2015). Such reporting enables tax authorities to upgrade the cost-effective evaluation of MNCs avoiding tax liability in different jurisdictions (Murphy, 2016). Thus, the shortcomings of standard tax-purposes group statements that led to the introduction and implementation of CbCR are the following (Murphy, 2016):

1. standard group financial statements do not always include all companies in the group;
2. standard group financial statements do not disclose all of the information, jurisdictions and businesses of every company in the group;

3. intra-group transactions, which are more susceptible to transfer-pricing risks, are usually and intentionally eliminated from consolidated financial statements;
4. segmented data by location are not disclosed in standard group financial statements; and
5. standard group financial statement transactions do not need to be same as transactions that tax authorities require to be disclosed for tax purposes (e.g., inter-group profit is removed from standard group financial statements).

On one hand, the essential reasons for introducing the CbCR concept are based on several anticipated benefits. Shedding light on transfer-pricing policies, tax strategies and MNCs' operations stand out as the biggest benefits, especially from tax authorities' viewpoint. CbCR also increases the level of information disclosed by locations of MNCs' economic operations (Hanlon, 2018). For publicly traded companies, one can obtain some information about the locations of the economic activities and jurisdictions where MNCs report their income. Information is disclosed about the home country–other country lines yet, unless CbCR is used, almost no information about the reporting in those other countries is obtainable. This means CbCR obtains much more information about the locations of companies and the countries where they report their income.

On the other hand, the benefits of CbCR extend to a better understanding of the positions and reports by companies themselves and possible behavioural responses by the companies (Hanlon, 2018). Although managers have insider information, they still may learn a lot about their companies when the perspective of reporting is changed and modifications in accounting standards or disclosures are requested (Amir, Guan & Oswald, 2010; Shroff, 2017). Therefore, MNCs may behaviourally respond to CbCR by changing their organisational structure and decreasing their profit reporting in low or no-tax jurisdictions. With respect to the introduction of CbCR, companies are concerned about a possible change in their reputation related to tax issues and try to stay away from financial accounting adjustments and profit changes made in previous periods. Recent studies show that MNCs have demonstrated two different behavioural responses to CbCR: 1) a better correlation between the locations of tax income reporting and companies' economic operations; and 2) moving activities to the location that they prefer for reporting their income (Hanlon, 2018).

CbCR has an impact on increasing the information requested from the capital point of view, which CbCR proponents see as valuable for investors. Murphy (2009) believes that information on the countries in which companies operate can improve investors' ability to assess the geopolitical risk and sustainability of MNCs' tax burdens. CbCR data give investors and shareholders the ability to better assess the risk associated with their investments in MNCs. The more understandable the risk is to investors, the lower the cost of capital for companies (Murphy, 2016).

In general, CbCR reveals benefits in several areas (Murphy, 2012):

1. **Transparency.** MNCs have thus far not been obliged to publicly disclose all of their accounts. The introduction of CbCR holds implications for expanding financial statement disclosure and provides transparency that is respected by investors.
2. **CSR.** CbCR has a positive impact on communication between companies on one side, and the environment and communities affected by companies' activities on the other.
3. **Accountability.** Companies used to be on public records but, to be accountable, they must be visible and identified. CbCR enlarges the local visibility of MNCs and puts them on the public record.
4. **Trade.** A substantial number of studies show that world trade happens in intra-group in 60% of cases or more. The current publishing practice of MNCs does not involve such trade in corporate reports. CbCR makes trade relations visible, comprehensible and fair.
5. **People.** In standard financial statements, MNCs present the general, aggregate number of employees in the company. CbCR gives the chance to distinguish the number of employees in each country in which a corporation operates, providing important information about working conditions.
6. **Taxes.** MNCs have several options to calculate their taxes and plan their tax statements as well as shift profits from one jurisdiction to another. CbCR shows the great benefits of making tax disclosures in each country an MNC operates. By introducing CbCR, the problem of tax disclosures and profit shifting may be addressed, which is in line with achieving the Millennium Development Goals (MDGs) of the United Nations (UN).
7. **Corruption.** MNCs generally refuse to comply with demands for transparency in tax payments, especially in extractive industries dominated by MNCs (the Extractive Industry Initiative). CbCR can become a tool to solve these problems by bringing the demand for tax transparency to all companies and addressing the corruption issue.
8. **Development.** Developing countries do not have enough financial resources to finance the entire public sector. Although international aid partially closes this gap, it also may provoke dependency, increase corruption, and lower the democratic accountability of such countries. MNCs' disclosure of their economic activities can contribute to ending this cyclical problem and improve developing countries' potential to establish independent, accountable and competent governments.
9. **Governance.** MNCs were the main actors in recent corporate scandals regarding offshore subsidiaries' activities. These problems were detected by the MNCs themselves and by the public, leading to serious governance problems and greater risk for shareholders, employees, local society and national governments. CbCR is seen as one of the tools for overcoming the governance issues of MNCs.
10. **Political instability**. Recently, there have been more and more requirements for transparent information about all activities of a corporation, including the countries where an MNC does business. Some countries are not politically stable and not recognised as adequate places for MNC operations. CbCR gathers all of the information related to countries where MNCs do business and discloses it to the public.

The list of CbCR benefits may be summarised as follows: 1) less income shifting; 2) greater information for tax authorities; 3) more attempts to request tax from international corporations by tax authorities; and 4) changing the practice of different policies related to locations, sources and apportionment. Empirical evidence shows that companies required to be more transparent following implementation of CbCR participate less in tax avoidance activities (Dyreng, Hoopes & Wilde, 2016). Similarly, decreased public disclosure is positively related to tax avoidance by international companies (Herbert, Olligs & Overesch, 2016). The advantages of CbCR are seen on both sides: 1) for MNCs, it eliminates double taxation, which is an important business goal; and 2) for tax authorities, it eliminates double non-taxation (Murphy, 2016). The consequences are a fairer and less complicated tax system and a reduced burden on businesses on the global level. Overall, the aforementioned findings lead to the conclusion that public pressure influences corporate behaviour and that CbCR thus plays a positive role in increasing the disclosure and transparency of MNCs' financial statements.

1.4.4 The costs of country-by-country reporting

Apart from the previously explained benefits, the costs of CbCR implementation should not be overlooked. First of all, this concern appears in the field of increased direct costs of country-by-country disclosures (Hanlon, 2018). The OECD document Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations (OECD, 2017) acknowledges the risk of significantly higher compliance costs and data requests because CbCR requires information about every entity in MNC group gathered in each jurisdiction. MNCs have difficulty collecting data not easily derived for every country while their accounting systems are struggling to adjust to the new disclosure demands (e.g., companies which have a considerable number of acquisitions, dealing with different legal systems and practices). In the academic literature, there is no unanimous opinion about the burden of collecting the data for CbCR. Murphy (2009) claims that corporations' existing accounting systems can provide the information needed for CbCR by using financial accounts, internal accounts, and tax declarations. Others argue that data-related costs will rise while implementing CbCR and new, currently non-existent data will need to be produced and transferred for the purposes of tax pricing analysis (Pinkernell, 2014).

Moreover, the direct costs of CbCR will certainly rise as part of meeting the requirement of the new disclosure imperative. A high cost in entailed to collect data and to preserve information consistency across time and jurisdictions. If there are inconsistencies in data collection, the validity of the information will be questioned (Evers, Meier & Spengle, 2014). Further, the direct costs of CbCR would reoccur for every CbC Report on a regular basis and require the need for a CbC Report audit.

It is expected that level of implicit costs will be greater than the direct costs of disclosure under CbCR. Implicit costs are referred to as a competitive disadvantage given that that CbCR is obligatory for large MNCs only, but not for all companies in specific countries (Evers, Meier & Spengle, 2014). Implementation of CbCR in the EU will lead to substantial disadvantages for MNCs doing business in the EU compared to corporations operating entirely outside of the EU (Bärsch, Engelen & Färber, 2016). For this reason, it is advisable to implement CbCR globally. Further, the possible implicit cost of CbCR could be related to the risk of double taxation, even if CbC Reports are not publicly disclosed. Even though the initial high costs of introducing CbCR will fall, the worry remains that the standard costs of CbCR will increase in the future (Hanlon, 2018). The reason for this increase in costs is the unfair behaviour of tax authorities prone to corruption in certain jurisdictions. Some countries may raise their tax requirements against a corporation (Schlie & Malke, 2013) and cause a tax-related distributional dispute (Pinkernell, 2014). MNCs have a serious concern that such tax authorities may be involved in income shifting, claiming that the corporation has a legal obligation to report income and pay taxes in their jurisdiction. Corporations generally believe they will not be protected enough and that 'controversy costs' with CbCR in the future will grow much higher. Some countries may use the opportunity to increase source taxation and impose additional burdens on MNCs.

The disclosure of all tax data payments in CbCR potentially confronts tax secrecy, namely, the main principle of tax law in most countries. Even if CbC Reports are disclosed to the tax authorities but not to the public, the risk of tax secrecy violation remains. Legal standards with respect to tax secrecy should be imposed (Cockfield & MacArthur, 2015). Moreover, one cost imposed by CbCR is that tax secrecy could be violated by the mandatory disclosure of public subsidies received. This is not a good solution for governments, which play a key role in raising public funds and use a tax amnesty for this purpose. If some companies disclose information about the write-off of their tax liabilities, this could negatively impact other companies that feel unfairly treated and increasingly avoid paying taxes.

The interpretation of tax information from tax disclosures requires profound and comprehensive knowledge of international tax law and tax authorities thus run the risk of misinterpreting or incorrectly processing tax information in CbCR, which may result in charges wrongly be laid against corporations (Reibel, 2015). Further, another possible cost of CbCR is refers to increasing the costs of public relations. MNCs may incur considerable public relations costs if internal information is leaked to the public, even if a corporation has strictly complied, been fair in its tax reporting, and not engaged in tax shifting. MNCs have doubts about how CbCR will affect their reputation in the future. This topic is certainly extremely for future research.

To summarise, the call for greater tax transparency through CbCR stems from the need to allocate the profits made by MNCs to the jurisdiction in which they do business together with the need for each part of an MNC group to be observed as a separate entity for tax purposes.

In the view of the author is this dissertation, the contribution of CbCR will be reflected in MNCs participating in less income shifting, more financial data being available to tax authorities, and governments having stronger opportunities to impose taxing rights on MNCs' income.

2 LITERATURE REVIEW

This chapter presents current literature on tax avoidance, tax aggressiveness and CbCR. The literature review on tax avoidance is divided into two large groups: tax avoidance by industrial firms and tax avoidance by the banking sector. Further, the main focus of the literature review is on tax aggressiveness and how it impacts different factors in the industrial and financial sectors.

This chapter also explains the relationship between tax aggressiveness and CbCR as the primary tax transparency instrument for detecting and preventing tax aggressiveness. An overall literature review on CbCR is presented along with the impact of tax transparency on tax aggressiveness, focusing on empirical studies conducted in the banking sector. Finally, the chapter provides an in-depth literature review of CbCR and tax aggressiveness and develops the research hypotheses considered in the dissertation.

2.1 Tax avoidance

2.1.1 Tax avoidance by industrial firms

The literature contains numerous of studies dealing with tax avoidance in various ways. International tax policy discussions have considered MNCs' tax avoidance activities. Thomsen and Watrin (2018) looked for differences between US companies and companies from 12 European countries as regards tax avoidance activities. The results of their study show the ETR of US companies and the ETRs of companies from large European counties (France and Germany) are similar. Opposite to the observation for the USA, the gap between ETRs and statutory tax rates (STRs) for EU companies is reduced over the period. This may be seen as evidence of less tax avoidance in the EU over time. Further, the empirical analyses presented in the doctoral dissertation include three proxies of aggressive tax avoidance (ETR, CASHETR and BTD) to estimate whether the tax avoidance of EU multinational banks has been decreasing in the post-implementation period of CbCR.

The literature gives substantial evidence regarding tax avoidance using the financial, tax and empirical data. The trend in the literature is to focus on the reasons that some companies engage more in aggressive tax avoidance than others. These research studies present a comprehension of organisational motivation (Gallemore & Labro, 2015; Higgins, Omer & Phillips, 2015; Kubick, Lynch, Mayberry & Omer, 2015; McGuire, Omer & Wilde, 2014;

Robinson, Sikes & Weaver, 2010), the external relationships of organisations (Keung, Qiang & Hao, 2013), political actions and connections (Brown, Drake & Wellman, 2015), and reputations/image (Gallemore, Maydew & Thornock, 2014). Further, some studies looked at: incentives for executives (Armstrong, Blouin & Larcker, 2012; Chyz, 2013; Dyreng, Hanlon & Maydew, 2010; Francis, Hasan, Wu & Yan, 2014), the influence of shareholders (Khurana & Moser, 2013; Badertscher, Katz & Rego, 2013; Cheng, Huang, Yinghua & Stanfield, 2012; Rego & Wilson, 2012), the participation of other external parties (auditors) (McGuire, Omer & Wang, 2012) and trade unions (Chyz, Leung, Li & Rui, 2013).

Certain leading authors studied how MNCs use tax havens to lower their tax burden amount (e.g., Dyreng, Lindsey & Thornock, 2013; Markle & Shackelford, 2012; Dyreng & Lindsey, 2009; Seida & Wempe, 2004), where it was concluded that the presence of subsidiaries in tax havens notably brings down the overall tax burden of a company. Some researchers examined inter-temporal changes, albeit not as the main interest under study (e.g., Dyreng, Hanlon & Maydew, 2008; Hoopes, Mescall & Pittman, 2012).

However, the majority of studies dealing with tax avoidance, especially ETRs, were cross-sectional. Markle and Shackelford (2012) studied ETRs globally in the period 2005–2009 and concluded that ETRs were decreasing over time in many countries. For a sample of companies from 82 countries, they found evidence that the ETRs of US firms were significantly correlated to the ETRs of companies from other countries, all showing a decline during the period. Using a sample of multinational banks from 25 European countries, this doctoral dissertation estimates the development of ETR, CASHETR, and BTD by dividing European countries into the two institutionally and economically different regions, i.e., Western and Eastern Europe.

Tax avoidance and tax aggressiveness have been related to many other constructs in this area of research. McGuire, Omer and Wang (2012) studied the impact of the tax characteristics of external audit firms on their clients' tax avoidance. The results of their research show that firms using external audit services avoid more taxes when their tax auditing firm is a tax expert. When audit firms have greater overall expertise, their clients exhibit more tax avoidance because auditing professionals use audit and expert services to develop tax strategies for their client companies, with these strategies having a positive impact on their clients' tax and financial statements. The mentioned authors also show that the more the external audit firm is a tax industry expert, the more tax avoidance its clients engage in. Further, based on a sample of companies from 31 countries, Kanagaretnam, Lee, Lim and Lobo (2016) explore the relationship between auditor quality and corporate tax aggressiveness. For companies whose corporate tax avoidance measure is within the top quintile of each country-industry combination, there is evidence that the probability of their tax aggressiveness is negatively correlated with auditor quality, while controlling for other institutional determinants (e.g., taxes). A negative correlation between auditor quality and probability of tax aggressiveness is more highlighted in countries where investor protection is stronger, auditor litigation risk is higher, the audit environment is better, and the pressure of the capital market is greater. Similarly, the doctoral dissertation examines the impact of country effects (e.g., a worldwide or a territorial taxation approach, economic growth (GDP), the complexity of tax regimes in the country and the strength of reporting and auditing standards in the country) on tax aggressiveness. Further, for an in-depth insight into the effects of tax aggressiveness, the economic, institutional and tax-system aspects of EU countries are presented by dividing the sample into two: Western and Eastern European countries.

Xia, Cao and Chan (2017) question the impact of the social trust surrounding a company in China and its tax avoidance. They hypothesised that social trust lowers tax avoidance and in this way social trust reduces agency conflict. Their results confirm this hypothesis: a stronger connection between social trust and company tax avoidance is shown for state-owned companies and those with low corporate governance. Similarly, Kanagaretnam, Lee, Lim and Lobo (2014) examined how differences in social trust across the countries impact tax avoidance. Their research that considered a sample of international companies and a country-level index for social trust shows that higher social trust is related to lower corporate tax avoidance. This impact of trust on tax avoidance is stronger in weak institutional settings (institutional settings are measured by the level of investor protection, disclosure requirements, and tax enforcement). Watson (2015) shows that a low level of social responsibility is positively correlated with tax avoidance in companies with weak current or future earnings, although this effect is reduced when current or future earnings performance becomes higher.

While Hanlon and Heitzman (2010) call for more research on the social connections between tax avoiding companies, Brown and Drake (2013) explore corporate tax avoidance through the social structure with accentuated tax avoidance behaviour. The research examines whether network ties can explain differences in corporate tax avoidance and how the link between tax avoidance and network ties varies depending on the nature and context of the ties. The ties of low-tax firms have a stronger influence on tax avoidance in cases where: the firm and its network partner are similar, the firm and the partner engage the same auditor and the ties are created by the executive directors. The overall impact of firms' network ties on their tax avoidance behaviour is determined by the nature of these ties. The results show that firms with more network ties that have a low tax burden engage in tax avoidance to a greater extent.

A study by Duan, Ding, Hou and Zhang (2018) examines the impact of Chief Executive Officer (CEO) publicity on the tax avoidance of companies. The research included the CEOs of S&P 500 firms between 2004 and 2011, with the results confirming that CEOs with greater publicity pay more tax fees to auditors and have a lower tax rate. Besides the impact of CEO publicity on tax avoidance (Duan, Ding, Hou & Zhang, 2018), other studies consider the relationship between tax avoidance and: incentives for managers (Desai & Dharmapala, 2006), family ownership (Chen, Chen, Cheng & Shevlin, 2010), trade unions (Chyz, Leung, Li & Rui, 2013), board ties and low-tax companies (Brown & Drake, 2014), and under-sheltering (Hanlon & Heitzman, 2010; Gallemore, Maydew & Thornock, 2012; Dowling, 2014).

The role of customer–supplier relationships in tax avoidance is, however, largely unknown. This gap in the literature is surprising given that most respected tax advisors like the Big Four accountancy firms (i.e., Ernst & Young, Deloitte Touche Tohmatsu, KPMG, PricewaterhouseCoopers) give consulting services regarding tax efficient supply-chain management, such as tax-haven strategies (Gilson, Wells, Feinberg & Newman, 2014). The study by Cen, Maydew, Zhang and Zuo (2017) analyses gains in customer–supplier relationships via supply chains using tax avoidance. Both the customer and supplier in the relationship enjoy the benefits of tax avoidance and avoid tax more often than other companies do. Evidence for this is that principal customers and dependent suppliers pay lower taxes by shifting their profit to tax havens. The results of this study are important for policymakers concerned about such strategies. The OECD recently established a major initiative with the aim to deal with the "base erosion" case when multinational firms shift a large part of their income to affiliates located in a tax haven (OECD, 2013). Policymakers in the USA are equally concerned, as shown in the US Senate's hearings that inspected individual companies (e.g., US Senate, 2014). In the USA, MNCs generating a turnover of more than USD 850 million are obliged to provide CbC Reports. In March 2020, the US Congress sent a bicameral letter to the OECD in an attempt to strength its effectiveness and to oblige countries and MNCs to properly implement this reporting (Koppel & Stauner, 2020). Specifically, this doctoral dissertation may be of particular interest to policymakers in terms of preventing tax avoidance activities based on the presented empirical findings regarding the effects of CRD IV and CbCR on the aggressive tax avoidance of multinational banks.

The impact of taxes on corporate and financing decisions has been the subject of interest in several studies over time: from Modigliani and Miller (1963) through to Graham (2013). The role of taxes in capital structure is studied by DeAngelo and Masulis (1980), Myers (1984), Graham (1996) and van Binsbergen, Graham and Yang (2010). Further, previous research studies analyse the role of taxes in a range of corporate decisions referring to aspects such as leasing (Graham, Lemmon & Schallheim, 1998), internal capital markets (Desai, Foley & Hines, 2004), cash holdings (Foley, Hartzell, Titman & Twite, 2007), hedging (Graham & Rogers, 2001), management buyouts (Kaplan, 1989), risk-taking (Ljungqvist, Zhang & Zuo, 2015) and a company's relationships with other parties (Scholes, Wolfson, Erickson, Hanlon, Maydew & Shevlin, 2014).

Tax avoidance is unquestionably related to companies' financial decisions (Graham, Lemmon & Schallheim, 1998). For instance, Graham and Tucker (2006) presented that companies using tax shelters have a smaller need for borrowed financial funds because tax shelters provide non-debt tax shields. A principal proposition of tax avoidance is that it is rarely related to the act done in isolation (Scholes, Wolfson, Erickson, Hanlon, Maydew & Shevlin, 2014). Tax avoidance almost invariably affects or is affected by relationships with other parties (Shackelford & Shevlin, 2001). Researchers have studied the impact of several important relationships on tax avoidance, including relationships with employees (Chyz, Leung, Li & Rui, 2013), owners (Chen, Chen, Cheng & Shevlin, 2010; Desai and Dharmapala, 2006), potential acquirers (Erickson, 1998), joint-venture partners (Shevlin, 1987) and the government (Kim & Zhang, 2016).

Previous research largely using data for the USA connected some company characteristics with companies' tendency to avoid tax; namely firm size, profitability, leverage, capital intensity, and foreign operations (Stickney & McGee, 1982; Zimmerman, 1983; Porcano, 1986; Shevlin & Porter, 1992; Gupta & Newberry, 1997; Rego, 2003). Results of more recent studies reveal that companies accused of tax sheltering are more profitable, report larger book-tax differences, have greater R&D spending and lower leverage, and have subsidiaries located in foreign tax havens (Graham & Tucker, 2006; Wilson, 2009; Lisowsky, 2010). Further, ownership structure of the company (family ownership and dual class share structure) and CSR efforts are connected to tax avoidance activities (Chen, Chen, Cheng & Shevlin, 2010; Hoi, Wu & Zhang, 2013; McGuire et al., 2014). Similarly, in this doctoral dissertation tax aggressiveness is linked with bank-level characteristics such as bank size, pre-tax return on assets, leverage, banks' intangible assets, capital adequacy, assets quality, liquidity and deposits.

2.1.2 Tax avoidance by the banking sector

Interest in corporate tax avoidance has recently been growing as a political, economic and technological issue in the public sphere (Wilde & Wilson, 2017) and also in academic research thanks to the development of new sources, data and tax avoidance measures and techniques (Donohoe, McGill & Outslay, 2014; Joshi, Outslay & Persson, 2020). Academic research is still predominantly focused on tax avoidance activities in the corporate sector, while the role of financial institutions in tax avoidance has yet to be sufficiently explored. However, banks and other financial institutions as intermediaries in financial transactions are normally taxed in all and thus the focus of literature concerning financial institutions and tax avoidance is about the effects of taxation on financial companies' profitability. The tax burden and behaviour of financial institutions has been studied by several authors (Demirgüç-Kunt & Huizinga, 1999; Albertazzi & Gambacorta, 2010), with the results showing that even though banks are capable to transferring the tax burden to their clients, they are very active in tax avoidance activities.

Scholes, Wilson and Wolfson (1990) questioned whether changes in tax can influence the financing and investment policies of banks and conclude that tax deductibility of interest expense play a significant role in the decision on the volume of municipal bonds in a bank's holdings. Further, Hemmelgarn and Teichmann (2014) studied the impact of corporate income tax changes on banks' leverage, dividend policies and earnings management, inferring that taxes affect all three decisions. Andries, Gallemore and Jacobs (2017) investigated how the corporate tax system, via loan loss policies, effects the financial reporting of banks. Their results show that loan loss provisions were increased by the tax rates in the jurisdiction where provision tax deductibility is allowed. In addition, the Securities and Exchange Commission (SEC) revealed that ten major US banks were responsible for tax avoidance activities and the tax sheltering of hundreds of millions of dollars earned by private investment funds that paid tax-exempt dividends in 2003 (Auerbach, Devereux & Simpson, 2008). A study in the UK in 2005 discovered that five of the largest investment banks in the world, despite the fact they had earned profits reaching billions of dollars in the UK, paid no UK corporate tax (Austin, 2015). These findings suggest that corporate tax rate is an important factor in banks' financial reporting, investment, and capital structure decisions, and that these banks, like the corporate sector, seek to minimise their tax liability.

The determinants of tax avoidance are a topic of research pursued by Francis, Ren and Wu (2017). They study the relationship between tax avoidance and external financing, i.e., financing from debt. The question is whether firms were participating in less tax avoidance as a result of bank deregulation. In situations following the deregulation of banking, debts were cheaper and easier to obtain, leading to the assumption that firms should rely on tax avoidance activities less. Yet, Francis, Ren and Wu (2017) concluded that this hypothesis is not true and that there are no significant relationships between tax avoidance and debt financing. This conclusion holds even for companies faced with financial constraints. The other studies looking at the relationship between corporate tax avoidance and financing from debt show very mixed results. In a study based on sample of 44 tax shelter companies, Graham and Tucker (2006) found a positive relationship between tax shields and the use of debt. The same conclusion was reached by Bradley, Jarrell and Kim (1984). On the opposite, Edwards, Schwab and Shevlin (2013) claimed that only companies with financing difficulties engaged in more tax avoidance.

The role of banks and their impact on tax avoidance cannot not be analysed separately of their client companies. There is a relationship between corporate tax avoidance and the cost of bank loans. Bank loans are a very good basis for analysing the tax avoidance gains and losses of debt holders. Hassan, Hoi, Wu and Zhang (2014) considered a very large sample of 17,000 loans given to US public firms (period 1985–2009) to analyse the impact of tax avoidance on bank loan costs. The subjects of examination were all aggressive tax avoidance activities that produced risks, such as corporate-owned life insurance, transfer prices, offshore intellectual property, re-invoicing, reincorporation in a tax haven, etc. They state that companies with a higher level of tax avoidance have higher spreads when taking out loans from from banks. Companies that avoid taxes succeed to obtain looser non-price loan terms, have higher bond spreads while issuing securities and prefer bank loans over state bonds.

It is clear that banks are aware that the tax avoidance of their client companies poses a significant risk for the banks. For example, banks typically have long-term relationships with their client companies and are thus more likely to evaluate the risks and benefits of their clients' tax avoidance (James, 1987). Tax avoidance can lead to tax savings (Mills, 1998) and decrease leverage (Graham and Tucker, 2006). Yet, at the same time, tax avoidance practice can raise the overall risk exposure of banks by increasing information risk (Balakrishnan, Blouin & Guay, 2012), agency risk (Desai & Dharmapala, 2006) and the risk of an audit by the tax authorities (Mills, 1998). Tax avoidance activities may increase or decrease the cost of bank loans. However, if banks value the risk more than the benefits of corporate tax avoidance, which is very likely, there is a positive relationship between tax avoidance and the cost of a loan.

The relationship between bank activities, profit shifting and taxation was examined in several studies. There are significant bank responses to the profit taxation. Demirgüc-Kunt and Huizinga (1999, 2001) concluded that foreign banks pay lower taxes in some developed countries, probably due to profit shifting. Merz and Overesch (2016) study the profit shifting of multinational banks by analysing data from the Bankscope international banking database at the subsidiary level over 11 years and in 131 countries. They were especially interested in the tax elasticity of bank subsidiaries' profits and the channels of profit shifting. The tax elasticity of revenues was lower than the elasticity of the gains, meaning that profits were very tax-sensitive. Taxation in host countries also has a positive impact on the volume of loan loss provisions (these provisions decrease taxable income). Results of the Merz and Overesch (2016) study show that the reported profits of international bank subsidiaries are very responsive to taxes being changed in the host country. The scope of bank's profit sensitivity to taxation was twice as large as that found for MNEs outside the financial sector in earlier studies. Banks are very engaged in tax planning and exploiting taxing opportunities. In another study, Merz and Overesch (2016) analysed banks' response to taxation using a firm-level database. There is an important tax effect on the presented profit of subsidiaries, although the response to taxation varies for different types of business.

Similar to non-financial companies, taxes have a significant impact on financial decisions and the forming of the capital structure of banks. The results of studies for banks (Keen & de Mooij, 2012; de Mooij & Heckemeyer, 2013) are quite similar to those for the non-financial sector. Merz and Overesch (2016) established that the tax effect on financial decisions regarding the capital structure is smaller for multinational banks than for non-financial firms. Schandlbauer (2017) stress the role of taxes in decisions on capital structure. The growth of local state corporate tax rates in the US has an impact on assets and liabilities on the balance sheet of banks. Banks faced with higher taxes increased their non-deposit liabilities by about 5.9% one period before the tax change was implemented. In addition, better capitalised banks are able to increase their debt and benefit from the greater tax protection. Poorly capitalised banks, on the other hand, change the asset side on their balance sheet and reduce the volume of customer loans to reduce their after-tax cash flow.

The subject of the Reiter, Langenmayr and Holtmann (2021) study is internal debt used by banks in order to shift their profits and lower their tax liabilities. Based on regulatory data and German multinational banks, their study shows that banks use debt shifting channels to avoid paying taxes in a more aggressive way than multinational companies from the non-financial sector. A 10% higher corporate tax rate saw internal net leverage rise by a significant 5.63%, corresponding to a mean 18% increase.

It is important to mention that while much empirical literature deals with profit shifting by multinational companies in order to avoid taxes, very research studies considered the role of banks and the financial sector in tax avoidance. Particularly important when analysing banks in this context are internal credit relationships, namely, the main methods for profit shifting. Multinational banks can transfer their capital to their affiliates in low-tax countries or tax havens and then affiliates from low-tax surroundings lend money to their high-tax affiliates. Interest payments are thereby deducted from tax in the high-tax country and profits are shifted to affiliates using a lower tax rate.

Prior studies chiefly explored tax avoidance across companies in a single country, mainly the USA. One notable exception is the research by Atwood, Drake, Myers and Myers (2012) examining whether three home-country tax system characteristics – required book-tax conformity, a worldwide vs a territorial approach, and perceived strength of tax enforcement – are related to corporate tax avoidance. They concluded that a company exhibits lower tax avoidance when the book-tax conformity required is higher, a worldwide approach is used, and tax enforcement is perceived to be stronger. The contribution of the research presented in this dissertation is the analysis of tax avoidance between banks in EU member states and the channels and methods by which banks avoid tax. The database includes a number of EU countries with different tax rates and thus firm-level and country-level variables are used in the research to obtain a clear insight into banks' more aggressive tax avoidance activities.

2.2 Tax aggressiveness

The economic impact of tax aggressiveness on a company can be seen in different ways and the results of studies are mixed. Tax aggressiveness can decrease tax costs, ease the corporate tax burden, and increase the liquidity of a company allowing debt and equity investors to use the benefits of a higher cash flow. Graham and Tucker (2006) concluded that investors maintain this sort of value-enhancing view. Tax aggressiveness brings benefits to the firm, for instance, cash flow savings (Mills, 1998), relief of financial constraints (Edwards, Schwab & Shevlin, 2016), which leads to higher company value (Faulkender & Wang, 2006; Desai & Dharmapala, 2009). Desai and Dharmapala (2009) state that a positive relationship between company value and tax aggressive behaviour exists when a company has good governance. Hill, Kubick, Lockhart and Wan (2013) highlight the positive correlation between long-term abnormal stock returns and the lobbying costs of company focused on tax legislation for companies not generally seen as tax-aggressive. There is a direct relationship between tax aggressiveness and managerial compensation that is more strongly associated with increasing risk (e.g., the volatility of stock returns) (Rego & Wilson, 2012). Edwards, Schwab and Shevlin (2016) acknowledge that tax aggressive strategies can act to ease financial constraints by increasing cash flow savings.

Nevertheless, tax aggressiveness includes uncertain activities that can lead to the risks overcoming the advantages of tax aggressive behaviour. The potential benefits of aggressive tax activities depend on risk linked to those aggressive tax avoidance actions. Negative aspects of tax aggressiveness can be found in: IRS audit risk (Mills, 1998; Wilson, 2009), stock price crashes (Kim, Li & Zhang, 2011) and negative stock returns as a result of illegal tax shelter disclosures (Hanlon & Slemrod, 2009). Law and Mills (2015) conclude that financially restricted companies are more tax-aggressive. Further, the Generally Accepted Auditing Principles (GAAP) and ETRs are used in scientific research and literature to define tax avoidance actions (Dyreng, Hanlon & Maydew, 2008). Still, these measures do not ensure a benchmark that can be used to compare with tax aggressiveness. Raw GAAP and ETRs do not necessarily show any sign of the tax aggressiveness of a company. Besides the GAAP and ETRs, other tax aggressiveness measures have been used in the literature, based on: a company's probability to use tax shelters (Wilson, 2009; Lisowsky, 2010), tax haven activity (Dyreng & Lindsey, 2009), discretionary permanent book-tax differences (Frank, Lynch & Rego, 2009) and uncertain tax benefits recorded under FIN 48 (ending balance scaled by average assets) (De Waegenaere, Sansing & Wielhouwer, 2015).

Kanagaretnam, Lee, Lim and Lobo (2016) examined the relationship between auditor quality and corporate tax aggressiveness and empirically demonstrated that auditor quality is negatively associated with the likelihood of tax aggressiveness. No previous research dealt with this question related to tax aggressiveness in an international setting. Kanagaretnam, Lee, Lim and Lobo (2016) also analysed the implications and influences of cross-country institutional differences and use several measures of tax aggressiveness in their empirical model, such as indicators of tax avoidance, measures of auditor quality, time and industry variables, firm-level and country-level indicators. Auditors are prone to apply stricter reporting standards to tax aggressiveness actions, which will lead to a lower level of their clients' aggressive tax behaviour.

Research studies that refer to the connection between debt policy and the result of corporate tax strategies claim that tax-aggressive companies borrow less (Graham & Tucker, 2006; Richardson, Lanis & Leung, 2014), but on stricter terms and at higher debt costs (Hasan, Hoi, Wu & Zhang, 2013). Richardson, Lanis and Leung (2014) concluded that tax-aggressive firms have lower leverage ratios, especially those whose board had more outside directors. Hasan, Hoi, Wu and Zhang (2014) highlighted the positive relationship between tax avoidance activities and private loan spreads, collateral and contract requirements, indicating that the costs of borrowing are higher for private debt. The relationship between tax aggressiveness and the maturity of corporate debt was the subject of research by Kubick and Lockhart (2017). The shorter the debt maturity, the more aggressive the tax behaviour of companies. Lenders apparently view tax aggressiveness as a risk factor and shorten the debt maturity to monitor the debt of a tax-aggressive client. The main conclusion is that tax aggressiveness impacts the structure and maturity of corporate debt.

The crucial reason explaining why companies resort to tax aggressiveness is the continuous changes in tax systems and the uncertainty of tax liabilities. Alm (2014) studied how a stable and simpler model of the tax system would impact tax aggressiveness by decreasing the uncertainty involved. Guided by views from behavioural economics and individual (financial considerations of tax, penalties, etc.) and group motivations (social norms, morality, fairness) in a dynamic society, Alm (2014) concluded that uncertainty leads to a higher level of tax aggressiveness. This conclusion becomes even clearer when a number of different factors that influence taxpayers are analysed and both individual and group motivations are examined together.

Tax aggressiveness may be related to media independence. Media independence seen through competition and private ownership has an influence on decreasing tax aggressiveness, especially in a weaker legal and less transparent information environment (Kanagaretnam, Lee, Lim & Lobo, 2018). Similarly, Allen, Francis, Wu and Zhao (2016) established that analyst coverage limits tax aggressiveness by enhancing the visibility of tax aggressiveness and analysts' requirement for transparent information. While the different perspectives of research on tax aggressiveness were already highlighted, the links between the concept of tax aggressiveness and other perspectives such as CSR, financial reporting, and the stock market are also presented.

2.2.1 Tax aggressiveness and CSR

Tax aggressiveness and CSR are the subjects of research given their important ethical dimensions and implications for business. The tax aggressiveness–CSR relationship came into focus 15 years ago using different views from several disciplines, various methodologies and theoretical approaches. A group of authors (Whait, Christ, Ortas & Burritt, 2018) provided an integrative overview of tax aggressiveness and its relationship with CSR. The relationship between corporate tax aggressiveness and CSR has become a research focus in recent years due to the reassessment of the benefits of globalisation, the global financial crisis, and the need for countries to financially manage the recovery process. Since a key issue in financing is corporate taxation, academic interest has concentrated on what is and should be paid and where. Finally, the study by Whait, Christ, Ortas and Burritt (2018) identified four major sections: the goal and nature of taxation, theoretical perspectives, normative views, and empirical research.

Social responsibility and corporate tax aggressiveness are separate subjects of researchers' interest (Chen, Chen, Cheng & Shevlin, 2010; Desai & Dharpamala, 2006; Lanis & Richardson, 2015). Laguir, Stagliano and Elbaz (2015) consider the specific relationship between CSR and corporate tax aggressiveness. Based on French-listed companies, these authors arrive at results demonstrating that the type of CSR affects companies' tax aggressiveness. Their research shows that greater efforts in the CSR area lead to lower corporate tax aggressiveness. On the contrary, high levels of activities in the economic context are related to a high extent of tax aggressiveness. Chen, Chen, Cheng and Shevlin (2010) analysed the non-tax cost of tax aggressiveness and agency costs arsing from conflict between major and minor shareholders. They used several measures for tax aggressiveness on a sample of family-owned and other companies. The conclusion was that the owners of family firms are more prone to disregard the tax benefits of tax aggressiveness in order to avoid the non-tax costs from a price discount that can be caused by minority shareholders.

Numerous studies looked at the impact of executive compensations, as a significant element of corporate governance, on tax avoidance activities. Tax aggressiveness poses great risks to firms, especially when they lack effective corporate governance that can mask the pursuit of executive pay through tax avoidance measures (Desai & Dharmapala, 2006, 2009; Hanlon & Slemrod, 2009; Kim, Li & Zhang, 2011; Armstrong, Blouin, Jagolinzer & Larcker, 2015). The evidence given in several studies shows that the extent of equity-based compensation is positively related to the level of a company's tax avoidance (Phillips, 2003; Minnick & Noga, 2010; Armstrong, Blouin & Larcker, 2012; Armstrong, Blouin, Jagolinzer & Larcker, 2015; Rego & Wilson, 2012). Philips (2003) claimed that managers' compensation based on after-tax performance indicators decreases the *ETR* of companies. High-risk tax avoidance activities add to stock return volatility and the value of stock option portfolios related to the equity-based compensation of managers. Armstrong, Blouin and Larcker (2012) conclude that a negative relationship exists between the incentive compensation of managers and reported tax costs. The study by Minnick and Noga (2010) confirms that incentive-based compensations influence managers to undertake risky tax-related activities. Rego and Wilson (2012) stated that managers must have an impulse to use tax avoidance activities, which should result in net risk-adjusted advantages for shareholders. Managerial compensations linked to stock options motivate managers to undertake hazardous aggressive tax activities.

Another opinion in the literature on tax aggressiveness considers the agency theory framework. Weak corporate governance adversely affects shareholder value because managers may divert resources (Crocker & Slemrod, 2005; Desai & Dharmapala, 2006; 2009). In this view, tax aggressiveness reduces shareholder value in the absence of effective corporate governance. Thus, agency theory is also closely related to the tax aggressiveness of large banks due to the conflict of interest between managers and investors. While managers try to minimise the amount of taxes paid, investors expect higher shareholder value. Huang, Ying, and Shen (2018) examined the impact of executive pay on corporate tax aggressiveness in China. They showed that executive pay depends on the size and frequency of board meetings following introduction of a new Chinese law in 2006. While studies in the USA address the principal-agent conflict between shareholders and managers (Jensen & Meckling, 1976; Jensen and Murphy, 1990), most agency costs in China are related to the principal-principal conflict between majority and minority shareholders (Liu & Tian, 2012; Qian & Yueng, 2015). Principal-principal conflict is more serious in China than in the USA because the ownership structure in China is concentrated and majority shareholders have a strong role and influence on corporate strategies and decisions. As a result, executive compensation in China is mostly cash- rather than stock-based. Tax avoidance in China is widespread due to the weak enforcement of tax laws, inefficient management of tax authorities, inadequate skills and lack of human resources to deal with tax issues (Cai & Liu, 2009).

2.2.2 Tax aggressiveness and financial reporting

Heltzer, Mindak and Shelton (2012) examined the economics trade-offs make managers considering whether to report a high income in the financial statements and to present a low income for tax purposes. These authors investigated whether companies with aggressive financial reporting are also aggressive in their tax reporting and whether companies are ready to pay taxes when reporting higher earnings in financial statements. Neither of these two hypotheses is confirmed; instead, the results indicate that companies are willing to use aggressive financial reporting so long as it does not affect their tax reporting. Other authors also looked at the relationship of financial and tax reporting in the context of tax aggressiveness and reporting, with varying scientific results. Erickson, Hanlon and Maydrew (2004) analysed the tax politics of companies that had performed accounting fraud and concluded that companies were ready to pay for overstated income. Opposite to this, Frank, Lynch and Rego (2009) used a sample of 49,886 firm observations to investigate the link between aggressive tax and financial reporting and determined a strong positive correlation. They realised that companies with aggressive reporting of their financial income are simultaneously aggressive while reporting their tax income. They used measures of tax aggressiveness based on permanent differences rather than total or temporary book-tax differences. The costs that should counterbalance financial and tax reporting activities are insufficient, allowing companies to increase their book income and decrease their tax income in the same reporting period. Several studies in the USA show that companies report significantly higher financial income in their financial statements than their taxable income (Drucker, 2006).

However, recent trends show a growing gap between financial and taxable income, which means that companies do not always trade off their financial and tax-related decisions. The difference between financial income and taxable income for the federal government in USA has been observed to be increasing (Manzon & Plesko, 2002; Mills, Newberry & Trautman, 2002; Hanlon, Kelley Laplante & Shevlin, 2005). Obviously, companies present higher financial income to their shareholders and lower taxable income to the tax authorities. It is important to emphasise that tax aggressive reporting in this context is seen as tax aggressiveness and, in the doctoral dissertation, aggressive tax reporting (decreasing taxable income) is considered as forming part of aggressive tax activities.

2.2.3 Tax aggressiveness and the stock market

The empirical study by Brooks, Godfrey, Hillenbrand and Money (2016) investigated the significance of companies' tax payments for the financial performance of those companies. The research was performed in the UK and found no observable relationships between tax rates and stock returns for customer-facing and non-customer-facing companies. However, there is evidence that companies with lower ETRs show a notably bigger stock market risk. Negative disclosures about companies' tax payments published in a newspaper led to small negative returns, partially reversed, especially for smaller companies. Information released about company's potential involvement in corporate expatriation leads to higher and longer-lasting falls in share prices. Murphy (2004) analysed taxpayers in Australia and their attitudes and preferences for aggressive and creativeness in tax policy. The results show an important difference between aggressive and non-aggressive taxpayers and the way they formed their partnerships.

By estimating the effect of tax aggressiveness on the stock market from the agency theory view, Hasan, Hoi, Wu and Zhang (2014) showed that companies which undertake risky tax avoidance actions were recognised and investors saw these actions as detrimental. There is a negative market reaction to companies disclosing their tax shelter activities, especially those with weaker corporate governance (Hanlon & Slemrod, 2009). Tax-aggressive activities make it easier for managers to seek compensation and suppress bad news by justifying and masking those actions (Kim, Li & Zhang, 2011). Such aggressive tax actions accompanied by disclosures of bad news can cause the stock price to crash in the future, meaning it is crucial to ensure external monitoring for such companies (institutional ownership, analyst coverage, etc.).

Finally, to conclude this section, the doctoral dissertation contributes to tax accounting research by providing empirical evidence concerning the impact of CbCR implementation on aggressive tax avoidance in the EU banking sector. Further, to better understand the aggressive tax avoidance behaviour of EU multinational banks, an overview of tax system characteristics is presented in the dissertation along with the economic and statistical characteristics of the countries in which the banks operate.

2.3 Country-by-Country Reporting

2.3.1 Overall CbCR research

Prior CbCR studies focused on theoretical arguments in terms of its characteristics and qualifications. Evers, Meier and Spengel (2014) theoretically discussed the costs and benefits of CbCR. In their study, the authors argue that CbCR does not keep MNCs away from profit shifting activity. The authors also claim that neither consolidated financial statements nor individual ones are an appropriate basis to ensure specific tax information on the country level. According to these authors, the disadvantages of CbCR outweigh its advantages. This study suggests that tax legislators changing the international tax rules is an appropriate solution for decreasing tax aggressiveness activities and tax avoidance.

The benefits of CbCR reporting disclosure are evident in the strength of the behavioural response when firms curb their revenue shifting since they are now required to disclose their revenue and the nature of their activities on a country-by-country basis (Hanlon, 2018). An altered response in the behaviour of companies is attainable in two ways: (1) changing the jurisdiction for reporting the taxable income to be more consistent with the economic activity engaged in; and (2) moving economic activity to jurisdictions in which companies want to report their income. Hanlon (2018) investigates the OECD/BEPS CbCR requirements and the disjunction between CbCR data and tax policy regarding transfer pricing based on the arm's length principle. In the Hanlon (2018) study, potential benefits and costs (such as increased compliance costs) of CbCR are analysed as well as future potential costs (controversy costs). Another important issue observed by the author is the implications CbCR may have for the distribution of taxing rights.

Recent academic research on CbCR has considered the extractive sector (Johannesen & Larsen, 2016; Crawford, 2019). The struggle for greater corporate financial transparency in fact commenced with the extractive industries. In 2002, the global coalition and transnational social movement Publish What You Pay (PWYP) was launched in order to: (1) increase corporate financial transparency; (2) reduce corruption in the extractive sector; and (3) contribute to citizens' benefits with the revenues acquired from the extraction of natural resources. In addition, PWYP supports the CbCR initiative, claiming that the greater transparency and credibility provided by CbCR will ensure great commercial advantages for companies by pointing out their dedication to society and to investors (PWYP, 2015b, p. 11).

Crawford (2019) is critical of the process of international accounting construction and argues that PWYP is a powerful new factor in international accounting policy. Given that the International Accounting Standard Board (IASB) has resisted PWYP's demands, PWYP is using its skills and tactics to shift the target of its action from mandatory CbCR to an institutional dimension in which such reporting would be compulsory in Europe and beyond. The focus of PWYP's actions is to force national legislative authorities to change their transparency laws. Although PWYP has not been successful in having the IASB and FASB adopt CbCR, the initiative has raised awareness of the impact of corporate activities on corruption and inequality. The need for transparency in corporate activities in conjunction with CbCR has led to mandatory CbCR in several countries. CbCR is mandatory for large and listed extractive companies in the EU due to the EU's Accounting and Transparency Directive (EUAD) and is mandatory for extractive companies in Canada, Norway and the USA (regulated by national laws) (Chatzivgeri, Chew, Crawford, Gordon & Haslam, 2017; PWYP, 2016).

Johannesen and Larsen (2016) established that companies' public disclosure of the taxes they paid on a country-by-country level is related to significant decreases in firm value. Using the event study methodology, the authors provide strong evidence to show the impact of disclosure rules on firm value. First, their study reveals the four main calendar dates that refer to the phases of adoption of disclosure rules under European legislation on tax reporting.[9] Second, event study methodology was used to document stock price changes of a company during all four events. The results uncover that disclosure rules are very successful as factors for reducing rents produced by tax evasion. The author of the dissertation goes beyond Johannesen and Larsen (2016) to introduce empirical findings which indicate the effects of CbCR on tax aggressiveness after all four of these events, more precisely, following the European Council's adoption of CbCR. In contrast to their research, which observes extractive firms, the empirical research of the doctoral dissertation is conducted on the banking sector. What both studies have in common is that extractive companies and the banking sector are the first two sectors that were required to implement tax transparency disclosure and CbCR.

Brown, Jorgensen and Pope (2019) examined whether EU banks' mandatory CbCR has an impact on geographic segment reporting. The results suggest there has been no significant change in the volume of geographic segments, country segments, or items reported in segment reporting following the introduction of CbCR. Still, there is a positive correlation between the presence of tax havens and geographical segment aggregation. Banks in the EU have higher profit margins, profits per employee, revenue per employee, and lower effective accounting rates for actions in tax havens compared to banks in tax havens. Although CbCR has a limited impact on geographic segment reporting, CbCR provides additional information and a better understanding of a bank's presence and exposure in tax havens.

Using CRD IV CbCR data, several research studies have examined the CbCR requirements. Studies explored the assessment of the presence of tax havens or the misalignment of profit locations in European banks (Joshi, Outslay & Persson, 2018). The results reveal that 36 of the most prominent EU banks have a considerable presence in tax havens (Murphy, 2015).

[9] These four event studies are: 1. Endorsement of the CbCR by the European Parliament; 2. Agreement between the European Parliament, the Council and the Commission; 3. Adoption of the CbCR by the European Parliament; 4. Adoption of the CbCR by the European Council.

Moreover, European banks show a remarkable discrepancy between the locations of their profits and the locations of their banking activities when revenues and employees are analysed (Jelínková, 2016). Dutt, Ludwig, Nicolay, Vay and Voget (2019) examined bank stock price movements following CbCR participation in CRD IV and found no significant abnormal returns.

While reviewing the tax and banking literature, little research can be found on bank tax aggressiveness and CbCR. It is very difficult to quantify and document banks' tax aggressive activities, mainly due to the inaccessibility of data and confidential banking information. This dissertation is the first study to identify and theoretically explain the variables that influence banks' tax aggressive behaviour. In addition, this study uses newly published data to evaluate the role of CbCR in tax aggressiveness in the banking sector. To the best of the author's knowledge, this is the first study to link CbCR and tax aggressiveness to observe whether CbCR implementation and the disclosure of taxes paid have an impact on tax-aggressive activities.

Drawing on prior literature, one sees that the most comprehensive evidence of CbCR is provided by Bouvatier, Capelle-Blancard and Delatte (2017). When analysing data of the EU 36 largest banks according to total assets, their findings show that tax savings for EU banks amounted to be between EUR 1 billion and EUR 3.6 billion. Their evidence presents three key tax havens within Europe: Luxembourg, the Isle of Man, and Guernsey. Further, information published from 2015, the first year the CbCR were available, is used. The Bouvatier, Capelle-Blancard and Delatte (2017) study considers the following items as the subject of information disclosure for banks: turnover, number of employees, pre-tax profit or loss, tax on profit or loss, and public subsidies received.

However, previous studies do not provide empirical evidence in support of the claim that changing the international tax rules will reduce tax aggressiveness. This dissertation provides the first empirical results following investigation of whether the introduction of CbCR has truly been successful enough to meet the expectations of tax administrators, various organisations, institutions and governments to reduce tax aggressiveness. The results of the study shed light on the impact of CbCR on banks' activities in the areas of tax aggressiveness, tax transparency and CSR as a whole.

2.3.2 The effect of tax transparency on tax aggressiveness

The literature has focused on the relationship of banks' tax transparency with the impact of the financial crisis (Manganaris, Beccalli & Dimitropoulos, 2017), corporate taxation (Andries, Gallemore & Jacob, 2017), and financial performance (Akhigbe, McNulty & Stevenson, 2013). Yet, many issues surrounding banks' tax transparency remain unclear. According to the OECD (2010), banks represent a crucial risk to tax systems because they use, relieve or promote aggressive tax schemes. The goal of this doctoral dissertation is to gain a deeper understanding of banks' tax aggressiveness activities and their relationship with CbCR. Specifically, whether the requirements for greater tax transparency reduce banks' tax aggressiveness activities is examined.

The recent financial crisis spread the strong belief that banks' information and banking systems are not transparent (Bushman, 2014). Following the crisis, efforts made by the OECD and the European Commission focused on improving the transparency provided by the financial sector and gaining public trust. By implementing and creating different Directives and action plans (EU CRD IV and BEPS), these institutions have created the basis for better transparency. After examining the effects of the financial crisis on banks' transparency, Manganaris, Beccalli and Dimitropoulos (2017) show that banks had improved their transparency following the crisis. Since CbCR is a strong instrument for attaining greater tax transparency, the literature is extended in this doctoral dissertation by providing evidence on the relationship between banks' tax transparency and tax aggressiveness. The dissertation includes the period after the crisis because CbCR is an action the OECD and the European Commission adopted following the crisis.

An academic study published by Balakrishnan, Blouin and Guay (2012) shows that the tax aggressiveness firms are positively related to lower corporate transparency. Empirically testing the link between tax aggressiveness firms and information asymmetry, earnings quality and analysts' forecast errors, they reveal that tax-aggressive firms are connected with a higher level of analysts' forecast errors and information asymmetry as well. In their study, the authors demonstrate a positive relationship between tax-aggressive firms and lower earnings quality. The tendency of managers is to provide the tax authorities with a lower level of earnings or pre-tax income and to report a high level of income to investors, which makes for a contradiction in the reporting activities of firms. It is expected that banks develop a similar reporting environment, which represents the basis for different reporting manipulation and tax aggressiveness activities with pre-tax income. Due to the protection of the information and activities of banks, it is unclear how banks perform these actions regarding decreasing their pre-tax income and thus their tax liabilities. This doctoral dissertation fills this void by presenting detailed analysis of banks' tax aggressiveness indicators.

2.3.3 The effect of CbCR on tax aggressiveness

In the final report on tax aggressiveness indicators, the European Commission (2017) defines the tax aggressiveness structure and the primary mechanisms. This report also presents three tax aggressiveness channels: tax aggressiveness via interest payments, tax aggressiveness via royalty payments, and tax aggressiveness via the strategic transfer pricing of goods and services. For each of these three channels, a number of general indicators is set, giving information about the correlation of tax aggressiveness with other bank activities. The mentioned indicators are divided into two categories: those used on the country level, indicating the influence of tax aggressiveness on every member country, and the second is those applied on the bank level representing the specific relationship between banks' activities.

Linking this study of tax aggressiveness to the dissertation research allows the tax aggressive activities of banks to be more accurately determined. According to the European Commission (2017), the most important activity in the tax aggressiveness structure is income shifting through interest payments. This issue is also specific to the banking sector. Interest costs are items that can be deducted from the tax base and are very suitable for income shifting by banks. Interest costs can be deducted from the tax base of the parent bank and taxed in an offshore branch bank at a lower rate or even not at all. The other income shifting option is to treat the deducted interest costs as dividend income in another bank branch. Some banks eliminate interest costs as a method of income shifting because the observed bank has become transparent to other businesses. In addition, interest costs can be deferred and deducted in the observed bank so that they do not have to be paid in the other bank branch. These activities are all part of tax aggressiveness and hence interest costs are a particular interest in the dissertation research. The second important mechanism presented in this study of tax aggressiveness is transfer pricing whereby intra-bank transactions are priced to increase profits in low-tax countries at the expense of high-tax countries. Therefore, the issue of whether banks with greater tax transparency reduce these tax aggressive activities is also examined.

Dyreng, Hoopes and Wilde (2016) contend that firms control for the relationship between tax avoidance benefits and reputational costs while attempting to reduce their disclosure risk, which may increase as tax transparency increases. Publicly available CbC Reports provide useful information for tax regulators who detect irregularities in tax payments.[10] For instance, CbCR provides information on profits, number of employees, and taxes paid by jurisdictions in which a company operates. Tax regulators could determine jurisdictions in which companies conduct the majority of their operations and make profits, and (low income tax) jurisdictions in which they pay taxes, which could initiate the further investigation of MNCs' tax activities. Joshi, Outslay and Persson (2020) noted that greater tax transparency could deter income shifting motivated by tax purposes. Hence, one may assume that increasing tax transparency via CbCR reduces aggressive tax avoidance activities. If the increased tax transparency is enough to minimise the income shifting activities undertaken by MNCs, one may expect that it is enough to encourage a decrease in the overall tax aggressiveness of EU banks. Based on these strong arguments, the following directional hypothesis is proposed for the tax aggressiveness of banks in the post-adoption period of CbCR:

[10] For instance, by reviewing the Panama Papers the UK tax authorities were able to recover approximately USD 125 million in unpaid taxes (BBC, 2017).

H2 The implementation of CbCR reduces the tax aggressiveness of EU banks.

The post-adoption period of CbCR reveals differences related to the level of its implementation. Some multinational banks have implemented CbCR fully: their publicly disclosed CbC Report provides all relevant information required by the EU Capital Directive IV (CRD IV). Other banks have not produced a CbC Report at all or their report was not made publicly available. Finally, partial CbCR implementation is associated with banks that created and published CbC Reports with some information missing according to the Capital Directive IV (CRD IV).[11] If one can predict that the level of CbCR implementation affects the level of banks' tax aggressiveness, the empirical question may be posited: To what extent is banks' tax aggressiveness affected by the level of their CbCR implementation? The third hypothesis thus states:

H3 The level of CbCR implementation (1. full implementation, 2. full non-implementation, 3. partial implementation) impacts the tax aggressiveness of EU banks.

3 RESEARCH METHODOLOGY

3.1 Empirical models

3.1.1 Tax aggressiveness models for EU banks

To conduct in-depth analysis of the aggressive tax avoidance behaviour of Western and Eastern European banks (Hypothesis 1), the following regression models (Model 1 and 2) are used:

$$ETR_{i,t} = \beta_0 + \beta_1\, TIME_t + \beta_2\, EAST_i + \beta_3\, EAST_i * TIME_t + \beta_4\, SIZE_{i,t} + \beta_5\, ASSETS\_QUALITY_{i,t} + \beta_6\, LIQUIDITY_{i,t} + \beta_7\, STR_{i,t} + \beta_8\, WWTAX_{i,t} + \beta_9\, CFC\_RULES_{i,t} + \varepsilon_{i,t} \quad (1)$$

$$ETR_{i,t} = \beta_0 + \beta_1\, TIME_t + \beta_2\, Bulgaria + \beta_3\, Croatia + \beta_4\, Czech + \beta_5\, Hungary + \beta_6\, Lithuania + \beta_7\, Poland + \beta_8\, Romania + \beta_9\, Slovak + \beta_{10}\, Slovenia + \beta_{11}\, SIZE_{i,t} + \beta_{12}\, ASSETS\_QUALITY_{i,t} + \beta_{13}\, LIQUIDITY_{i,t} + \varepsilon_{i,t} \quad (2)$$

Following previous literature (e.g., Hanlon & Heitzman, 2010; Thomsen & Watrin, 2018), the effective tax rate (ETR) is used as the primary proxy of banks' aggressive tax avoidance behaviour. TIME represents the fiscal year of sampled firm-year observations reduced by observations in 2009 (the first year in the sample period). The TIME variable takes values between 0 and 9, which is consistent with the sample period 2009–2018. EAST represents an indicator that equals 1 for Eastern European banks and 0 for banks domiciled in Western

[11] A review of CbC Reports of EU banks shows that tax information related to public subsidies is most often missing.

Europe. EAST*TIME indicates the interaction term between TIME and EAST in order to test differences in time trend between Western and Eastern European banks. In addition, all variables from these models are presented in the sections 3.2 and 3.3 and defined in detail in Appendix A.

3.1.2 Tax aggressiveness model in the pre- and post-implementation periods of CbCR

To examine the impact of the newly introduced CbCR on the tax-aggressive behaviour of EU banks (Hypothesis 2), a difference-in-difference (DID) research design[12] is adopted by using a panel data fixed-effects regression model. The following DID regression model (Model 3) is thus estimated:

$$TAXAGG_{i,t} = \alpha_0 + \beta_1 \cdot Multinational_{i,t} + \beta_2 \cdot CbCR\_legislation_{i,t} \cdot Multinational_{i,t} + \left(\sum_{k=3}^{l} \beta_k \cdot Firm\_Control_{k,t}\right) + \left(\sum_{m=l+1}^{n} \beta_m \cdot Country\_Control_{m,t}\right) + \beta_s \cdot YEAR\_FIXED\_EFFECTS + \varepsilon_{i,t} \quad (3)$$

where index i refers to the bank and t to the time period. $TAXAGG_{i,t}$ represents the dependent variable, which is one of the three proxies for tax aggressiveness, α_0 is the grand intercept, $CbCR\_legislation_{i,t}$ represents the variable on interest equal to 0 for the time period before 2014 (the period before implementation of CbCR) and equal to 1 for 2014 and later. The main variable of interest is the interaction between $CbCR\_legislation_{i,t}$ and Multinational variable. $Multinational_{i,t}$ is a dummy variable equal to 1 if a company has at least one subsidiary located outside the country of the parent company, and 0 otherwise. Therefore, the main coefficient of interest is the fixed effects estimation β_2. $Firm\_Control_{k,t}$ represents firm-level control variables and $Country\_Control_{m,t}$ refers to country-level control variables. In addition, $\varepsilon_{i,t}$ is the residual error term on the firm level. The estimation is performed three times by continuously extending the regression model with the control variables. The regression model is estimated using year fixed effects. Firm- and country-level controls are explained in sections 3.2 and 3.3, and described in detail in Appendix A.

3.1.3 Tax aggressiveness model for the level of CbCR implementation

To estimate the effects of the level of CbCR implementation (1. full implementation, 2. full non-implementation, 3. partial implementation) on the tax aggressiveness of banks (Hypothesis 3), the following linear regression model (Model 4) is used:

$$TAXAGG_{i,t} = \alpha + \beta_1 \cdot CbCR\_implementation_{i,t} + \left(\sum_{k=2}^{l} \beta_k \cdot Country\_Control_{k,t}\right) + \beta_s \cdot BANK\_FIXED\_EFFECTS + \varepsilon_{i,t} \quad (4)$$

[12] The difference-in-difference method is well suited for analysing the effects of drastic changes in government policy (Angrist & Krueger, 1999).

The variable of interest is an ordinal variable ($CbCR\_implementation_{i,t}$) which equals 0 if the CbC Report is not publicly available on a bank's website nor is part of other publicly available reports of the bank such as annual reports, financial statements, or CSR reports (full non-implementation of CbCR by bank i in period t), 1 if a country-by-country report is available on the bank's website, but the report does not contain all of the necessary information (partial implementation of the CbCR by bank i in period t) and 2 if CbC Report is publicly available on the bank's website and was prepared following all the instructions prescribed by the OECD and the EU (full implementation of CbCR by bank i in period t). The major coefficient of interest is β_1 since it estimates the relative change of tax aggressiveness ($TAXAGG_{i,t}$) during the implementation of CbCR on the change of EU banks in the same period. While the independent variable of interest has three components, the univariate general linear model, which includes discontinuous independent variables, is used. This regression model is tested using the time year fixed effects to correct annual trends of ETR, CASHETR and BTD. A time trend variable (TREND) is also included to prove that statutory corporate income tax rates change over time and can affect banks' tax aggressiveness. All variables are explained in the following sections and Appendix A.

3.2 Measures of tax aggressiveness

In the tax accounting literature, authors have developed various measures of tax avoidance and tax aggressiveness, as shown in Table 2. According to Francis, Ren and Wu (2017), overall tax avoidance is measured by the book effective tax rate (ETR) and the cash effective tax rate (CASHETR), while more aggressive tax activities are captured by the estimation of total book-tax differences (BTD) and discretionary permanent book-tax differences (DTAX). Since the study presented in this dissertation is focused on aggressive tax avoidance activities, three proxies of the tax aggressiveness of firms are estimated: book effective tax rate (ETR), cash effective tax rate (CASHETR) and total book-tax differences (BTD).

Table 2: Overview of studies measuring tax avoidance and tax aggressiveness

Authors	Dependent variable	Measurement
Francis, Ren & Wu (2017)	Tax avoidance	ETR and CASHETR
Chen, S., Chen, X., Cheng, Q. & Shevlin, T. (2010)	Tax aggressiveness	ETR
Francis, B. B., Hasan, I., Wu, Q. & Yan, M. (2014)	Tax aggressiveness	DTAX
Dunbar, A., Higgins, D., Phillips, J. & Plesko, G. (2010)	Tax aggressiveness	ETR and CASHETR
Guenther D. A. (2014)	Tax avoidance and tax aggressiveness are used as the same terms	ETR, CASHETR and BTD
Frank, Lynch & Rego (2009)	Tax reporting aggressiveness	DTAX

Table 2: Overview of studies measuring tax avoidance and tax aggressiveness (continued)

Authors	Dependent variable	Measurement
Manzon & Plesko (2002)	Book-tax spread	BTD
Thomsen & Watrin (2018)	Tax avoidance	ETR and CASHETR

Source: *Own work*

3.2.1 Effective tax rates (ETR and CASHETR)

The book effective tax rate (ETR) and cash effective tax rate (CASHETR) are used to imply several types of tax avoidance activities, including tax aggressiveness (Dyreng, Hanlon & Maydew, 2010; Hanlon & Heitzman, 2010; Francis, Ren & Wu, 2017). The main reason for using ETR is associated with the direct impact of firms' tax avoidance activities on their net income (Hanlon & Heitzman, 2010). Due to the inclusion of deferred taxes, ETR measures permanent book-tax differences (Thomsen & Watrin, 2018). More precisely, permanent book-tax differences appear when firms employ very aggressive tax planning practices. For instance, shifting income to low-tax countries and using tax havens for investments are classified as very aggressive tax planning practices (Chen, Chen, Cheng & Shevlin, 2010; Thomsen & Watrin, 2018).

ETR is measured by the ratio of total tax expenses (i.e., current and deferred) divided by pre-tax income. This measure can be written as follows:

$$ETR_{i,t} = \frac{Total\ Tax\ Expense_{i,t}}{Pre{-}tax\ Income_{i,t}} \tag{5}$$

Following previous studies (Dyreng, Hanlon & Maydew, 2008; McGuire, Omer & Wang, 2012; Thomsen & Watrin, 2018), higher values of ETR represent lower levels of tax avoidance.

The measure of cash effective tax rate (CASHETR) includes both permanent and temporary book-tax differences. The main argument for using CASHETR relates to the assumption that managers use aggressive tax planning activities to reduce cash taxes paid in the current period (Dyreng, Hanlon & Maydew, 2008; McGuire, Omer & Wang, 2012). CASHETR is the ratio of cash taxes paid to pre-tax income (Francis, Ren & Wu, 2017). CASHETR for a given bank i in year t can be presented as follows:

$$CASHETR_{i,t} = \frac{Cash\ Taxes\ Paid_{i,t}}{Pre{-}tax\ Income_{i,t}} \tag{6}$$

Studies suggest that a higher value of CASHETR indicates less corporate tax avoidance (Gupta & Newberry, 1997; Rego, 2003; Francis, Ren & Wu, 2017; Thomsen & Watrin, 2018).

3.2.2 Book-tax difference (BTD)

The measures of total book-tax difference (BTD) were created to capture more aggressive tax avoidance behaviour by firms (Hasan, Hoi, Wu & Zhang, 2014; Francis, Ren & Wu, 2017). For instance, firms with higher BTD values are associated with larger proposed audit adjustments and are more likely to be the subject of an audit by the Internal Revenue Service – IRS (Mills, 1998). Further, these firms are associated with a higher probability of engaging in tax sheltering (Wilson, 2009).

The BTD of Manzon and Plesko (2002) is a rational measure for the tax aggressiveness of banks because BTD reflects the difference between financial statement income and taxable income (McGuire, Omer & Wang, 2012). Based on Manzon and Plesko (2002), Frank, Lynch and Rego (2009), and Comprix, Graham and Moore (2011), total BTD is estimated for a given bank i in year t, as follows:

$$BTD_{i,t} = \frac{Pre\text{–}tax\ Income_{i,t}}{Taxable\ Income_{i,t}} \tag{7}$$

Taxable income is calculated using current tax expense increased by the statutory tax rate (Manzon & Plesko, 2002; Lev & Nissim, 2004). This estimation can be presented as follows:

$$Taxable\ Income_{i,t} = \frac{Current\ Tax\ Expense_{i,t}}{Statutory\ Tax\ Rate_{i,t}} \tag{8}$$

Current literature on tax accounting (Mills, 1998; Wilson, 2009; McGuire, Omer & Wang, 2012; Francis, Ren & Wu, 2017) suggests that larger BTD values indicate higher levels of aggressive tax avoidance.

3.3 Control variables

The first category of control variables involves firm-level variables. Larger companies have greater capabilities and resources to engage in the various forms of aggressive tax avoidance activities (Kanagaretnam, Lee, Lim & Lobo, 2016; Francis, Ren & Wu, 2017) and thus bank size (SIZE) is controlled. SIZE is measured by the natural logarithm of total assets (Francis, Ren & Wu, 2017; Sudrajad & Hübner, 2019). Bank financial performance is also controlled by employing pre-tax return on assets (PROA) because more profitable companies have bigger incentives to undertake aggressive tax avoidance activities (Chen, Chen, Cheng & Shevlin, 2010). Leverage (LEVERAGE) is also controlled, which is a significant variable since more leveraged companies have a stronger ability to reduce taxes in their financial transactions (Mills, Erickson & Maydew, 1998). LEVERAGE is measured as long-term debt divided by total assets. The empirical model (3) includes the tax treatment of banks' intangible assets (INTANG) because investments in intangible assets create more opportunities for tax aggressiveness through transfer pricing activities (Dunbar, Higgins, Phillips & Plesko, 2010). The CAMELS indicators (CAPITAL_ADEQUACY, ASSETS_QUALITY AND LIQUIDITY) are also employed, as used by bank supervisory authorities to rate the overall condition of a bank and to predict bank failures (Jin, Kanagaretnam & Lobo, 2011; Hasan, Liu & Zhang, 2016). CAPITAL_ADEQUACY is controlled as well due to the assumption that banks may shift their capital as equity to low-tax jurisdictions. Further, assets quality (ASSETS_QUALITY) is controlled, which measures the quality of all significant assets of a bank including its loans, investments and other assets that influence the bank's financial condition (Hasan, Hoi, Wu & Zhang, 2014). It may be assumed that banks with high-quality assets and a solid financial position have smaller need to resort to tax shelters, tax shields and tax aggressiveness. Bank liquidity (LIQUIDITY) and deposits (DEPOSITS) are also controlled due to their sensitivity to bank activities related to reductions in pre-tax income. LIQUIDITY is measured as liquid assets divided by total assets. The DEPOSITS variable is measured as the ratio of a bank's deposits divided by its total assets.

The second category of control variables consists of country-level indicators that may affect the aggressive tax avoidance behaviour of firms. It is well known that MNCs shift their profits to low-tax rate countries in order to pay less tax. Following previous studies (Atwood, Drake, Myers & Myers, 2012; Kanagaretnam, Lee, Lim & Lobo, 2016; Overesch & Wolff, 2018; Thomsen & Watrin, 2018; Joshi, Outslay & Persson, 2020), the statutory tax rate (STR) is controlled. Also controlled whether a country's tax system, i.e., the country where the firm operates, follows a worldwide or a territorial taxation approach (WWTAX). A worldwide tax system implies that a corporation with its headquarters in one country must pay the tax on all its income regardless of where the corporate income was earned. Unlike the worldwide taxation approach, territorial taxation means that a country only taxes income earned within its borders, which allows MNCs to move their operations from higher tax countries to low-tax countries (Huang, Marr & Friedman, 2013). Atwood, Drake, Myers and Myers (2012) established a relationship between the corporate tax rate and taxation approach on one hand, and the tendency to avoid taxes on the other. Further, economic growth (GDP) is controlled because firms in countries with higher real GDP per capita are more likely to be tax-aggressive (Kanagaretnam, Lee, Lim & Lobo, 2016). Following the study by Thomsen and Watrin (2018), the complexity of tax regimes in the country (TAX_COMPLEXITY) and the strength of reporting and auditing standards in the country where the firm operates (REPORTING_ STRENGTH) are additionally controlled. Based on this study, the existence of controlled foreign company rules in the country (CFC_RULES) is also included. Thomsen and Watrin (2018) show that tax complexity, auditing strength and established CFC rules are associated with ETRs.

3.4 Sample selection and descriptive statistics

To estimate tax aggressiveness within EU countries and evaluate the effects of CbCR implementation level on the tax aggressiveness of EU banks, data were collected from various sources. First, the unconsolidated financial statement data[13] of EU banks were obtained from the Fitch Connect Database for the period 2009–2018. Second, a unique CbC Reports database was prepared on the level of CbCR implementation, manually collected from 200 commercial banks' websites on which CbC Reports were publicly disclosed in either the form of CbCR or as part of other reports. More precisely, data were gathered on whether a bank provides full implementation of CbCR, whether the implementation is completely missing (full non-implementation) or whether CbCR is only partially implemented (partial implementation). The complete CbCR requirement under CRD IV came into effect in 2014. Therefore, CbCR data were collected for a period of 5 years (2014–2018). To ensure a clear insight into the effect of CbCR on banks' tax aggressiveness the periods before and after implementation of CbCR were observed. Thus, tax aggressiveness is compared during the 5 years before the implementation of CbCR (2009–2013) with such aggressiveness in subsequent years (2014–2018). All firm-year observations with a negative pre-tax income are excluded due to the difficulties of interpreting negative ETRs (Thomsen & Watrin, 2018). Finally, the balanced panel sample includes a total of the 195 largest EU banks by total assets (1,950 firm-year observations) from 25 EU countries between 2009 and 2018. The sample consists of 167 banks domiciled in Western Europe and 28 banks domiciled in Eastern Europe. Table 3 shows the number of multinational banks included in the sample for each country in Western and Eastern Europe. Third, country-level data were hand-collected from different sources: the World Bank's database (GDP), KPMG's corporate tax rate table[14] (STR), World Competitiveness Reports between 2009 and 2018 (TAX_COMPLEXITY and REPORTING_ STRENGTH) and related studies by Johansson, Skeie and Sorbe (2016) (CFC_RULES) and Matheson, Perry and Veung (2013) (WWTAX). Further, to control the effects of the financial crisis analysis not including data for 2009 was performed. The empirical results were qualitatively similar to the analysis including the data for 2009 and this year is hence included in the estimation.

[13] Since the CbCR contains information for each country in which MNC is doing business and the country is related to the CbCR adoption and implementation, we use unconsolidated financial statement data. Also, each country has its own tax system characteristics and statutory tax rate what is important when we control for the country-level variables included in the tax aggressiveness analysis. In our database, each bank is administratively and formally registered in the respective country. A research studies that estimate country-level control variables, also perform estimation on the unconsolidated financial information (e.g., Merz & Overesch, 2016; Francis, Iftekhar, Wu & Yan, 2014).

[14] See KPMG (2019) https://home.kpmg/xx/en/home/services/tax/tax-tools-and-resources/tax-rates-online/corporate-tax-rates-table.html for more information.
The table of corporate tax rates is available in Appendix B of this dissertation.

Table 3: Bank distribution by country

Country		Number of banks	Percent	Valid Percent	Period (in years)
WESTERN EUROPE	Austria	6	3.6	3.6	10 years (2009–2018)
	Belgium	6	3.6	3.6	10 years (2009–2018)
	Cyprus	1	0.6	0.6	10 years (2009–2018)
	Denmark	6	3.6	3.6	10 years (2009–2018)
	Finland	4	2.4	2.4	10 years (2009–2018)
	France	31	18.6	18.6	10 years (2009–2018)
	Germany	21	12.6	12.6	10 years (2009–2018)
	Greece	4	2.4	2.4	10 years (2009–2018)
	Ireland	5	3.0	3.0	10 years (2009–2018)
	Italy	24	14.4	14.4	10 years (2009–2018)
	Luxembourg	10	6.0	6.0	10 years (2009–2018)
	Netherlands	9	5.4	5.4	10 years (2009–2018)
	Portugal	4	2.4	2.4	10 years (2009–2018)
	Spain	13	7.8	7.8	10 years (2009–2018)
	Sweden	2	1.2	1.2	10 years (2009–2018)
	United Kingdom	21	12.6	12.6	10 years (2009–2018)
	WEST Total	167	100.0	100.0	
EASTERN EUROPE	Bulgaria	1	3.6	3.6	10 years (2009–2018)
	Croatia	3	10.7	10.7	10 years (2009–2018)
	Czech Republic	4	14.3	14.3	10 years (2009–2018)
	Hungary	2	7.1	7.1	10 years (2009–2018)
	Lithuania	3	10.7	10.7	10 years (2009–2018)
	Poland	8	28.6	28.6	10 years (2009–2018)
	Romania	3	10.7	10.7	10 years (2009–2018)
	Slovak Republic	3	10.7	10.7	10 years (2009–2018)
	Slovenia	1	3.6	3.6	10 years (2009–2018)
	EAST Total	28	100.0	100.0	

Source: *Own work*

Table 4 shows the level of CbCR implementation by each EU country for the investigated period between 2009 and 2018. It is important to emphasise that the sample includes the pre-implementation period of CbCR, i.e., all banks have non-implementation status between 2009 and 2013. Banks domiciled in the Western European countries (United Kingdom, Belgium, Cyprus, France, Ireland) have higher levels of full CbCR implementation, ranging from 35% to 41%. Banks domiciled in the Eastern European countries (Bulgaria, Croatia, Czech Republic, Romania) have full CbCR implementation at a level between 30% and 50%.

Table 4: Level of CbCR implementation by country

		IMPLEMENTATION			
		Non	Partial	Full	Total
WESTERN EUROPE	Austria	50	0	10	60
		83.3%	0.0%	16.7%	100.0%
	Belgium	31	11	18	60
		51.7%	18.3%	30.0%	100.0%
	Cyprus	7	0	3	10
		70.0%	0.0%	30.0%	100.0%
	Denmark	45	0	15	60
		75.0%	0.0%	25.0%	100.0%
	Finland	30	0	10	40
		75.0%	0.0%	25.0%	100.0%
	France	165	31	114	310
		53.2%	10.0%	36.8%	100.0%
	Germany	128	32	50	210
		61.0%	15.2%	23.8%	100.0%
	Greece	30	0	10	40
		75.0%	0.0%	25.0%	100.0%
	Ireland	28	7	15	50
		56.0%	14.0%	30.0%	100.0%
	Italy	185	26	29	240
		77.1%	10.8%	12.1%	100.0%
	Luxembourg	51	25	24	100
		51.0%	25.0%	24.0%	100.0%
	Netherlands	66	4	20	90
		73.3%	4.4%	22.2%	100.0%
	Portugal	35	1	4	40
		87.5%	2.5%	10.0%	100.0%
	Spain	93	15	22	130
		71.5%	11.5%	16.9%	100.0%
	Sweden	15	5	0	20
		75.0%	25.0%	0.0%	100.0%
	United Kingdom	119	5	86	210
		56.7%	2.4%	41.0%	100.0%
Total WEST		1078	162	430	1670
		64.6%	9.7%	25.7%	100.0%
EASTERN EUROPE	Bulgaria	5	0	5	10
		50.0%	0.0%	50.0%	100.0%
	Croatia	15	4	11	30
		50.0%	13.3%	36.7%	100.0%
	Czech Republic	20	0	20	40
		50.0%	0.0%	50.0%	100.0%
	Hungary	15	0	5	20
		75.0%	0.0%	25.0%	100.0%
	Lithuania	20	6	4	30
		66.7%	20.0%	13.3%	100.0%
	Poland	61	11	8	80
		76.3%	13.8%	10.0%	100.0%
	Romania	20	0	10	30
		66.7%	0.0%	33.3%	100.0%
	Slovak Republic	15	9	6	30
		50.0%	30.0%	20.0%	100.0%
	Slovenia	10	0	0	10
		100.0%	0.0%	0.0%	100.0%
Total EAST		181	30	69	280
		64.6%	10.7%	24.6%	100.0%

Source: *Own work*

3.4.1 Descriptive statistics of Western and Eastern EU banks

Table 5 presents descriptive statistics of Western and Eastern EU banks. To compare the aggressive tax avoidance behaviour of Western and Eastern European banks, 1,950 firm-year observations over the 10-year sample period (2009–2018) are investigated. Descriptive statistics are presented for firm-level control variables (SIZE, LEVERAGE, CAPITAL_ADEQUACY, ASSETS_QUALITY and LIQUIDITY) and country-level control variables (STR, WWTAX and CFC_RULES).

Table 5: Descriptive statistics

	Group	N	Mean	Median	Std. Deviation	Minimum	Maximum
ETR	WEST	1321	0.2520	0.2317	0.22911	0.00	1.00
	EAST	252	0.1763	0.1709	0.13202	0.00	1.00
	Total	1573	0.2398	0.2068	0.21825	0.00	1.00
SIZE	WEST	1557	24.6979	24.4741	1.51793	11.13	28.54
	EAST	252	23.4718	23.3972	0.61581	21.52	24.83
	Total	1809	24.5271	24.2627	1.48860	11.13	28.54
LEVERAGE	WEST	1555	0.9125	0.9409	0.12196	0.00	1.05
	EAST	252	0.8908	0.8937	0.03299	0.82	0.98
	Total	1807	0.9095	0.9342	0.11404	0.00	1.05
CAPITAL_ ADEQUACY	WEST	1557	8.6735	5.8500	12.36599	-7.10	100.00
	EAST	252	10.8861	10.6250	3.31707	2.18	18.34
	Total	1809	8.9817	6.4600	11.56368	-7.10	100.00
ASSETS_ QUALITY	WEST	1187	0.6976	0.3200	1.40561	-15.09	16.04
	EAST	247	1.0855	0.6600	1.50474	-1.62	8.92
	Total	1434	0.7644	0.3700	1.43016	-15.09	16.04
LIQUIDITY	WEST	1546	27.1268	20.0150	23.67248	0.00	100.00
	EAST	252	18.2048	13.8250	16.39846	1.87	92.60
	Total	1798	25.8763	18.6550	22.99913	0.00	100.00
STR	WEST	1670	27.7279	29.3700	5.12078	10.00	33.99
	EAST	280	18.0821	19.0000	2.61448	9.00	23.00
	Total	1950	26.3429	28.0000	5.90601	9.00	33.99
WWTAX	WEST	1670	0.05	0.00	0.226	0	1
	EAST	280	0.00	0.00	0.000	0	0
	Total	1950	0.05	0.00	0.210	0	1
CFC_RULES	WEST	1670	0.75	1.00	0.431	0	1
	EAST	280	0.09	0.00	0.291	0	1
	Total	1950	0.66	1.00	0.474	0	1

Notes: All financial statement data of European banks are gathered from the Fitch Connect Database. The dependent variable *ETR* is winsorised at 0 and 1 to limit the impact of outliers and extreme values, and the possibility of interpretation, especially of low values. All variables are defined in Appendix A. A t-test for the equality of the means of each variable between Western and Eastern European banks is also provided. All mean differences are significant at the 1% level (two-tailed).

Source: *Own work*

The mean ETR (25.2%) of Western European banks is approximately 7% higher than that of the Eastern European banks (17.63%). ETR is measured as the ratio of total tax expenses divided by pre-tax income. Regarding SIZE (measured by the natural logarithm of total assets), the average Western European bank appears to be larger than the average Eastern European bank. There are no major differences between the Western European and Eastern European bank samples when estimating the mean leverage (LEVERAGE, measured as long-term debt divided by total assets). The asset quality (ASSETS_QUALITY, measured as loan-loss provisions divided by total loans) of Eastern European banks is 0.39% higher than that of Western European banks. CAPITAL ADEQUACY, measured as the sum of tier 1 capital and tier 2 capital divided by risk-weighted assets, is 2.21 percentage points higher in the Eastern European sample (10.88%) than in the Western European one (8.67%). The average Western European bank has a liquidity ratio (LIQUIDITY, measured as liquid assets divided by total assets) of 27.13%, while the average of Eastern European bank's liquidity is 18.20%. Therefore, these findings suggest that banks in Western Europe are more liquid than banks in Eastern Europe.

Table 5 also reports descriptive statistics for country tax system characteristics that may affect the aggressive tax avoidance of Western and Eastern European banks. The mean STR of Western European sample is 9.65% higher than the mean STR of the Eastern European sample. A country's taxation approach is also controlled, i.e., whether the country in which a bank operates has established a worldwide or a territorial taxation approach (WWTAX). A worldwide taxation approach is found only in 5% of Western European firm-year observations (Greece and Ireland), while a territorial taxation approach exists across the rest of the Western and the whole of the Eastern European sample. Further, Thomsen and Watrin (2018) find that established controlled foreign company rules (CFC_RULES) are related to higher ETRs. Thus, the existence of CFC rules across the Western and Eastern European samples is controlled. CFC rules are found to be established in 75% of the Western European firm-year observations and in 9% of the Eastern European ones.

Table 6: Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
ETR	H_0	68.350	0.000	5.086	1571	0.000	0.07570	0.01489	0.04650	0.10490
	H_1			7.254	585.485	0.000	0.07570	0.01044	0.05520	0.09620
SIZE	H_0	146.421	0.000	12.652	1807	0.000	1.22605	0.09690	1.03599	1.41610
	H_1			22.442	854.134	0.000	1.22605	0.05463	1.11882	1.33328
LEV	H_0	22.586	0.000	2.806	1805	0.005	0.02169	0.00773	0.00653	0.03685
	H_1			5.820	1447.518	0.000	0.02169	0.00373	0.01438	0.02899
CAPI	H_0	21.887	0.000	-2.823	1807	0.005	-2.21262	0.78367	-3.74962	-0.67561
	H_1			-5.874	1459.194	0.000	-2.21262	0.37666	-2.95148	-1.47376
ASSE	H_0	9.947	0.002	-3.897	1432	0.000	-0.38790	0.09953	-0.58313	-0.19266
	H_1			-3.727	341.111	0.000	-0.38790	0.10407	-0.59261	-0.18319
LIQ	H_0	67.030	0.000	5.761	1796	0.000	8.92192	1.54862	5.88463	11.95921
	H_1			7.462	442.193	0.000	8.92192	1.19565	6.57206	11.27178
STR	H_0	148.965	0.000	30.848	1948	0.000	9.64574	0.31269	9.03250	10.25898
	H_1			48.160	704.597	0.000	9.64574	0.20029	9.25251	10.03897
WWTAX	H_0	71.664	0.000	3.992	1948	0.000	0.054	0.014	0.027	0.080
	H_1			9.750	1669.000	0.000	0.054	0.006	0.043	0.065
CFC_R	H_0	199.005	0.000	24.783	1948	0.000	0.662	0.027	0.609	0.714
	H_1			32.561	510.297	0.000	0.662	0.020	0.622	0.702

H_0: The two population means are equal
H_1: The two population means are not equal

Source: *Own work*

Table 6 presents an independent samples t-test comparing the mean values of each variable for Western and Eastern European banks to determine whether there statistical evidence exists that the mean values of the corresponding populations are significantly different. As the p-values given are below 0.05, the variances in all variables of the Western European banks are significantly different from those of the Eastern European banks.

Table 7: Pearson correlations matrix

		ETR	EAST	SIZE	LEV	CAPI	ASSE	LIQ	STR	WWTAX	CFC_R
ETR	Coeff.	1	-0.127**	-0.063*	0.100**	-0.105**	0.012	-0.058*	0.186**	0.078**	0.154**
	Sig.		0.000	0.012	0.000	0.000	0.643	0.022	0.000	0.002	0.000
	N	1573	1573	1573	1573	1573	1418	1567	1573	1573	1573
EAST	Coeff.	-0.127**	1	-0.285**	-0.066**	0.066**	0.102**	-0.135**	-0.573**	-0.090**	-0.490**
	Sig.	0.000		0.000	0.005	0.005	0.000	0.000	0.000	0.000	0.000
	N	1573	1950	1809	1807	1809	1434	1798	1950	1950	1950
SIZE	Coeff.	-0.063*	-0.285**	1	0.159**	-0.160**	-0.057*	0.065**	0.079**	0.044	0.242**
	Sig.	0.012	0.000		0.000	0.000	0.031	0.006	0.001	0.062	0.000
	N	1573	1809	1809	1807	1809	1434	1798	1809	1809	1809
LEVERAGE	Coeff.	0.100**	-0.066**	0.159**	1	-0.997**	-0.023	0.086**	0.139**	0.010	-0.012
	Sig.	0.000	0.005	0.000		0.000	0.384	0.000	0.000	0.660	0.618
	N	1573	1807	1807	1807	1807	1434	1796	1807	1807	1807
CAPITAL_	Coeff.	-0.105**	0.066**	-0.160**	-0.997**	1	0.022	-0.090**	-0.129**	-0.015	0.019
ADEQUACY	Sig.	0.000	0.005	0.000	0.000		0.412	0.000	0.000	0.537	0.409
	N	1573	1809	1809	1807	1809	1434	1798	1809	1809	1809
ASSETS_	Coeff.	0.012	0.102**	-0.057*	-0.023	0.022	1	-0.209**	-0.083**	0.174**	-0.039
QUALITY	Sig.	0.643	0.000	0.031	0.384	0.412		0.000	0.002	0.000	0.139
	N	1418	1434	1434	1434	1434	1434	1434	1434	1434	1434
LIQUIDITY	Coeff.	-0.058*	-0.135**	0.065**	0.086**	-0.090**	-0.209**	1	0.147**	-0.026	0.080**
	Sig.	0.022	0.000	0.006	0.000	0.000	0.000		0.000	0.275	0.001
	N	1567	1798	1798	1796	1798	1434	1798	1798	1798	1798
STR	Coeff.	0.186**	-0.573**	0.079**	0.139**	-0.129**	-0.083**	0.147**	1	-0.297**	0.454**
	Sig.	0.000	0.000	0.001	0.000	0.000	0.002	0.000		0.000	0.000
	N	1573	1950	1809	1807	1809	1434	1798	1950	1950	1950
WWTAX	Coeff.	0.078**	-0.090**	0.044	0.010	-0.015	0.174**	-0.026	-0.297**	1	-0.306**
	Sig.	0.002	0.000	0.062	0.660	0.537	0.000	0.275	0.000		0.000
	N	1573	1950	1809	1807	1809	1434	1798	1950	1950	1950
CFC_RULES	Coeff.	0.154**	-0.490**	0.242**	-0.012	0.019	-0.039	0.080**	0.454**	-0.306**	1
	Sig.	0.000	0.000	0.000	0.618	0.409	0.139	0.001	0.000	0.000	
	N	1573	1950	1809	1807	1809	1434	1798	1950	1950	1950

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

Source: *Own work*

Table 7 provides a Pearson correlations matrix among the variables. Almost all of the presented correlations are significant at the 0.01 or 0.05 level (2-tailed). LEVERAGE is found to be highly correlated with the firm-level control variable for CAPITAL_ADEQUACY (Pearson rho value is -0.997). After conducting a multicollinearity estimation, CAPITAL_ADEQUACY is excluded from further analysis due to multicollinearity problems.

3.4.2 Descriptive statistics of EU banks in the CbCR implementation

Table 8a shows descriptive statistics for the tax aggressiveness measures (ETR, CASHETR and BTD) in the pre- and post-implementation CbCR periods, while Table 8b presents descriptive statistics of the explanatory variables. Tables 8a and 8b present descriptive statistics for the 195 largest EU banks[15] by total assets from 25 European countries. Interval variables are presented by the mean, standard deviation, and first, second, and third quartiles. Categorical variables are presented with frequencies. The means of tax aggressiveness measures (ETR, CASHETR and BTD) are consistent with previous studies (McGuire, Omer & Wang, 2012; Overesch & Wolff, 2018; Thomsen & Watrin, 2018). The mean value of ETR is 0.239. The mean value of CASHETR is 0.251 and that of BTD is 0.007.[16] Most importantly, the mean values of ETR and CASHETR are higher in the post-implementation period, suggesting less aggressive tax avoidance. The mean values of BTD are lower in the post-implementation period, also indicating less aggressive tax avoidance by EU banks.

Table 8a: Descriptive statistics of dependent variables for the pre- and post-implementation period of CbCR

	Implementation period of CbCR	N	Mean	Std. Deviation	Percentiles 25	50	75
ETR		1573	0.2398	0.21825	0.0869	0.2068	0.3319
	pre-implementation	756	0.2207	0.19913	0.0677	0.2002	0.3199
	post-implementation	817	0.2604	0.23558	0.1047	0.2137	0.3562
CASHETR		798	0.2511	0.2911	0.0082	0.1727	0.3195
	pre-implementation	315	0.2151	0.2538	0.0007	0.1574	0.2718
	post-implementation	483	0.3064	0.3334	0.0173	0.1994	0.4359
BTD		799	0.00756	0.008379	0.00109	0.00459	0.0117
	pre-implementation	315	0.00785	0.007950	0.00134	0.00568	0.01246
	post-implementation	484	0.00712	0.008993	0.00068	0.00332	0.01032

Notes: The dependent variables ETR, CASHETR and BTD are winsorised at 0 and 1 to limit the impact of outliers and extreme values, and the possibility of interpretation, especially of low values. Variables are represented by mean, standard deviation and quartiles.
All variables are defined in Appendix A.

Source: *Own work*

Table 8b: Descriptive statistics of explanatory variables

		N	Mean	Std. Deviation	Percentiles 25	50	75
Multinational[a]		1950					
	category 0	890					
	category 1	1060					
CbCR_legislation		1950					
	category 0	975					
	category 1	975					
CbCR_implementation		1950					
	category 0	1259					
	category 1	192					
	category 2	499					

[15] Joshi, Outslay and Persson (2020) used a sample of 83 European banks (394 firm-year observations) provided by the Orbis/BankFocus database, while Overesch and Wolff (2018) conducted their study using a sample of 204 European banks (1,204 firm-year observations) gathered from the COMPUSTAT Global sample. Joshi, Outslay and Persson (2020) explained that the total number of EU banks is logical according to the regular monitoring exercises published by the Bank for International Settlements (BIS). The BIS includes 36 large multinational banks and 73 domestic banks in the European Union. Therefore, the sample is believed to be sufficient to completely capture the interest observations.
[16] The mean value of BTD is different to the value documented in McGuire, Omer and Wang (2012) because of the difference in the sample's composition, the geographic regions of the sampled firms, and the sample period.

Table 8b: Descriptive statistics of explanatory variables (continued)

	N	Mean	Std. Deviation	Percentiles 25	Percentiles 50	Percentiles 75
SIZE	1809	24.5271	1.4886	23.4378	24.2627	25.5581
PROA	1760	0.5249	4.86969	0.11	0.46	1.01
LEVERAGE	1807	0.9095	0.11404	0.8978	0.9342	0.9583
INTANG	461	442565144.6	1333776797	539419.6788	22786692.57	208535037
CAPITAL_ADEQUACY	1809	8.9817	11.56368	4.14	6.46	10.02
ASSETS_QUALITY	1434	0.7644	1.43016	0.1	0.37	0.96
LIQUIDITY	1798	25.8763	22.99913	8.915	18.655	35.28
DEPOSITS	1663	49.6003	25.3144	32.13	53.64	70.2
STR	1950	26.3429	5.90601	22	28	31.4
WWTAX[b]	1950					
category 0	1780					
category 1	170					
GDP	1950	1.0614	2.89495	0.2996	1.5274	2.3449
TAX_COMPLEXITY[c]	1755					
category 0	911					
category 1	844					
CFC_RULES[d]	1950					
category 0	664					
category 1	1286					
REPORTING_STRENGTH[e]	1950					
category 0	751					
category 1	1199					
TREND	1950	4.5	2.873	2	4.5	7

Notes: Category variables are represented with category frequency while interval variables are represented by mean, standard deviation and quartiles.

[a] Dummy variable equal 1 if a company has at least one subsidiary located outside the country of the parent company, and 0 otherwise.

[b] Indicator variable that equals 1 if the EU country adopts a worldwide taxation approach and 0 if the EU country adopts a territorial taxation approach.

[c] Indicator variable that equals 1 if a country has more complex tax regimes than the sample annual average and 0 otherwise. Data are collected from the World Competitiveness Reports in the period from 2009 to 2018.

[d] Indicator variable that equals 1 if a country has applied CFC rules (Controlled Foreign Company Rules), and 0 otherwise (for in-depth insight, see Johansson, Skeie and Sorbe (2016)).

[e] Indicator variable that equals 1 if a country has stronger reporting and auditing standards than the sample annual average and 0 otherwise. Data are collected from the World Competitiveness Reports in the period from 2009 to 2018. Respondents are required to answer the following question: What is the strength of auditing and reporting standards in your country? (1 = very weak and 7 = very strong).

All variables are defined in Appendix A.

Source: *Own work*

Table 9 presents the nonparametric correlation coefficients between the explanatory variables. Since categorical variables are also included, Spearman's rho nonparametric correlation coefficient is used. By conducting collinearity estimation and analysing the third regression model (Model 3), LEVERAGE is excluded from further analysis due to the collinearity problems and the variance inflation factor (VIF) being higher than 10. In the fourth regression model (Model 4), the variables of interest and country-level control variables are used. Spearman's rho correlation analysis and collinearity estimation show that the VIF factor takes a value greater than 10 for the following variables: STR, WWTAX, CFC_RULES and REPORTING_STRENGTH. These variables are excluded from the fourth regression model.

Table 9: Nonparametric correlation matrix of explanatory variables

Variables	v1	v2	v3	v4	v5	v6	v7	v8	v9	v10	v11	v12	v13	v14	v15	v16	V17
v1																	
v2	0																
v3	0.059*	0.727*															
v4	0.359*	-0.011	0.048*														
v5	-0.031	0.103*	0.111*	-0.293*													
v6	0.002	-0.127*	-0.031	0.302*	-0.406*												
v7	-0.019	-0.262*	-0.108*	0.378*	-0.118*	0.214*											
v8	-0.013	0.121*	0.026	-0.301*	0.410*	-0.993*	-0.221*										
v9	-0.067*	-0.239*	-0.266*	-0.075*	-0.184*	-0.176*	-0.039	0.177*									
v10	0.076*	-0.035	0.080*	0.194*	-0.107*	0.256*	0.202*	-0.249*	-0.320*								
v11	-0.145*	0.145*	0.083*	-0.397*	0.265*	-0.126*	-0.114*	0.135*	0.008	-0.156*							
v12	-0.100*	-0.129*	-0.048*	0.073*	-0.146*	0.309*	0.027	-0.302*	-0.044	0.090*	-0.223*						
v13	-0.009	0	-0.04	-0.014	-0.016	-0.137*	-0.094*	0.138*	0.193*	-0.131*	0.145*	-0.364*					
v14	0.047*	0.422*	0.319*	-0.083*	0.187*	-0.163*	-0.120*	0.164*	-0.301*	0.033	0.190*	-0.346*	0.151*				
v15	0.019	0.03	0.104*	0.083*	0.025	0.137*	-0.101*	-0.149*	-0.152*	0.106*	-0.073*	0.214*	0.074*	0.01			
v16	-0.041	0.006	0.005	0.260*	-0.137*	0.223*	0.159*	-0.213*	0.057*	0.055*	-0.278*	0.433*	-0.430*	-0.221*	0.213*		
v17	0.153*	0.001	0.129*	0.163*	-0.032	0.237*	0.023	-0.252*	-0.434*	0.270*	-0.208*	0.298*	-0.361*	0.079*	0.477*	0.145*	
v18	0	0.870*	0.644*	0.004	0.104*	-0.131*	-0.229**	0.124*	-0.269*	-0.032	0.164*	-0.160*	0	0.419*	-0.003	0.009	0.007

Notes: Values in the matrix represent Spearman’s rho coefficients.
The symbol v1 is used for the predictor Multinational, v2 for the predictor CbCR_legislation, v3 for the predictor CbCR_implementation, v4 for the predictor SIZE, v5 for the predictor PROA, v6 for the predictor LEVERAGE, v7 for the predictor INTANG, v8 for the predictor CAPITAL_ADEQUACY, v9 for the predictor ASSETS_QUALITY, v10 for the predictor LIQUIDITY, v11 for the predictor DEPOSITS_ASSETS, v12 for the predictor STR, v13 for the predictor WWTAX, v14 for the predictor GDP, v15 for the predictor TAX_COMPLEXITY, v16 for the predictor CFC_RULES, v17 for the predictor REPORTING_STRENGTH, v18 for the predictor TREND.
* Indicates that the correlation is significant at the 0.05 level (2-tailed).
All variables are defined in Appendix A.

Source: *Own work*

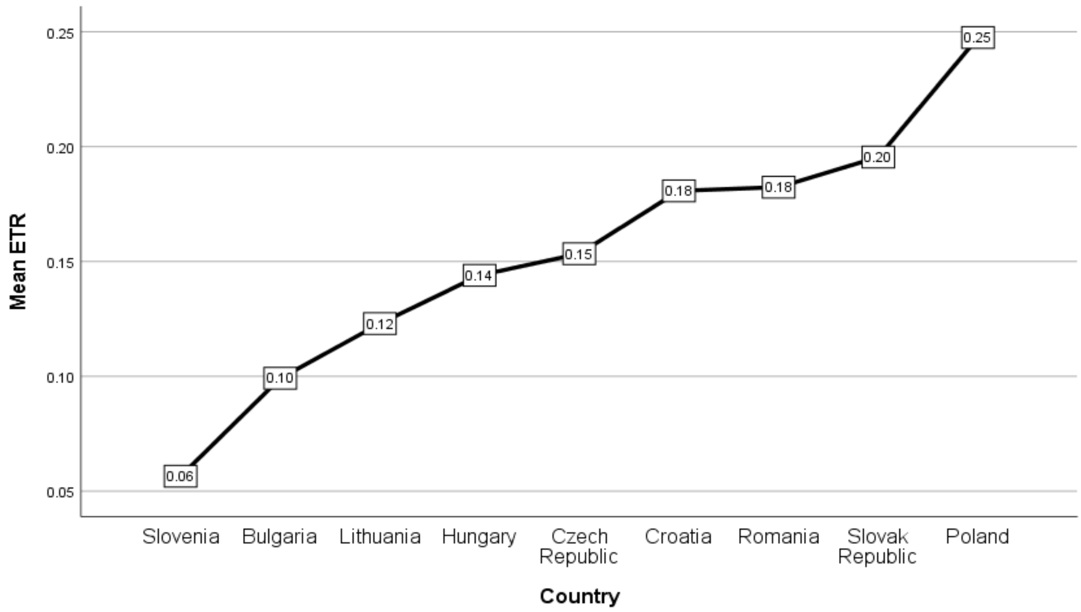
4 EMPIRICAL RESULTS

4.1 Analysis of tax aggressiveness of EU banks

4.1.1 Comparison between the aggressive tax avoidance behaviour of Western and Eastern European banks

To estimate the aggressive tax avoidance behaviour of Western and Eastern European banks, the mean ETR over the sample period (2009–2018) is first analysed. Figure 2 shows a clear upward trend of the mean Eastern European banks ETR. Banks domiciled in Slovenia have the lowest mean ETR (6%), whereas the highest mean of ETR is seen for banks domiciled in Poland (25%). These findings are consistent with the results of Thomsen and Watrin (2018) who find the mean ETR of Poland corporate groups is 21%. Certain Eastern European banks are also found to have a mean ETR of between 10% and 15% (Bulgaria, Lithuania, Hungary, Czech Republic). Further, the mean ETR of the banks domiciled in Croatia and Romania is 18%. Banks in the Slovak Republic have a mean ETR of 20%.

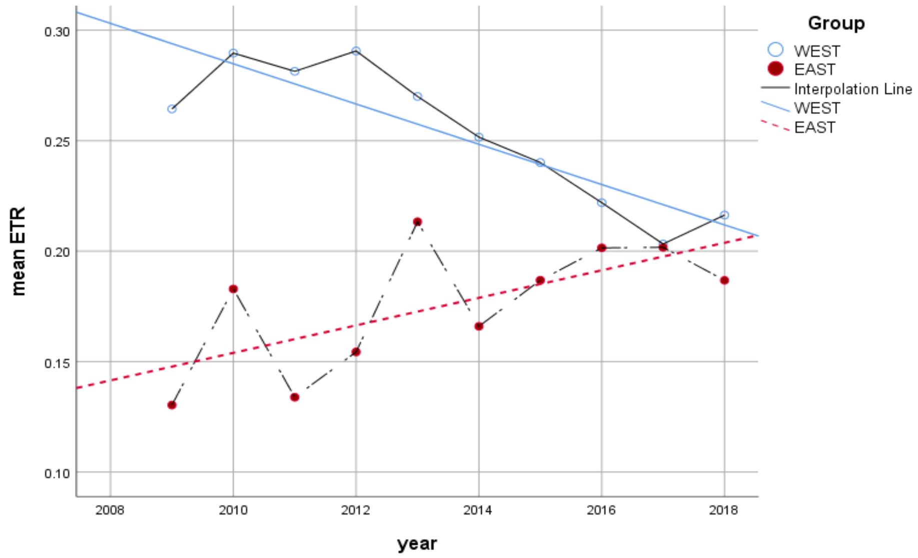
Figure 2: Average ETR for each Eastern European country in the sample period (2009–2018)



Source: *Own work*

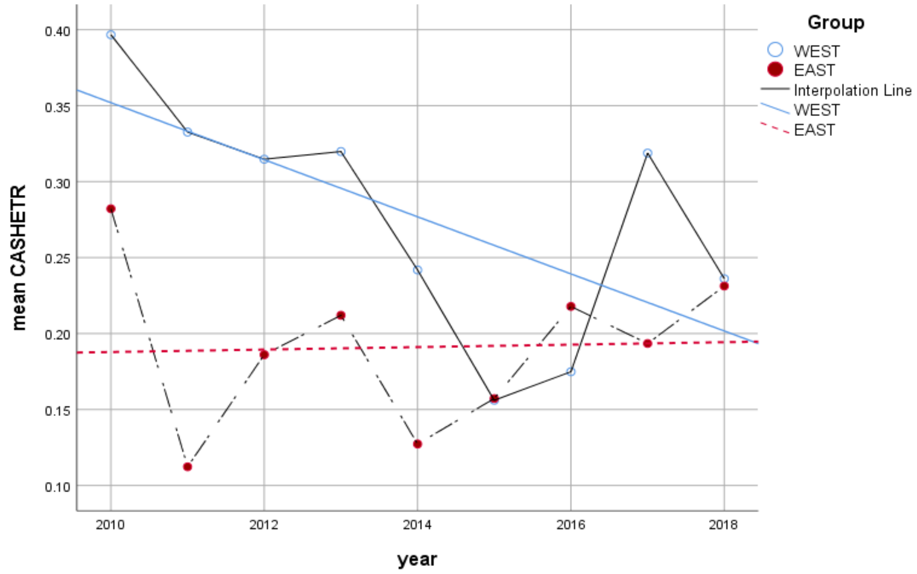
The mean ETRs of Western and Eastern European banks are also examined for each year of the sample period (Figure 3). Unlike the banks in Eastern Europe, the mean ETRs of Western European banks show a downward trend over the 10-year period investigated. The mean ETR of Western European banks is higher than the mean ETR of Eastern European banks in all years of the sample period, except 2017, when the observed European banks show approximately the same ETR values. The findings show that banks domiciled in Western European countries have a higher ETR value than banks in Eastern European countries, but their trends of ETR changes are different during the 10-year period under study. Even though Western European banks have higher ETR values, the upward trend of Eastern European ETRs shows that tax avoidance activities are significantly reduced during the sample period.

Figure 3: Average ETR for Western and Eastern European banks in the sample period (2009–2018)



Source: *Own work*

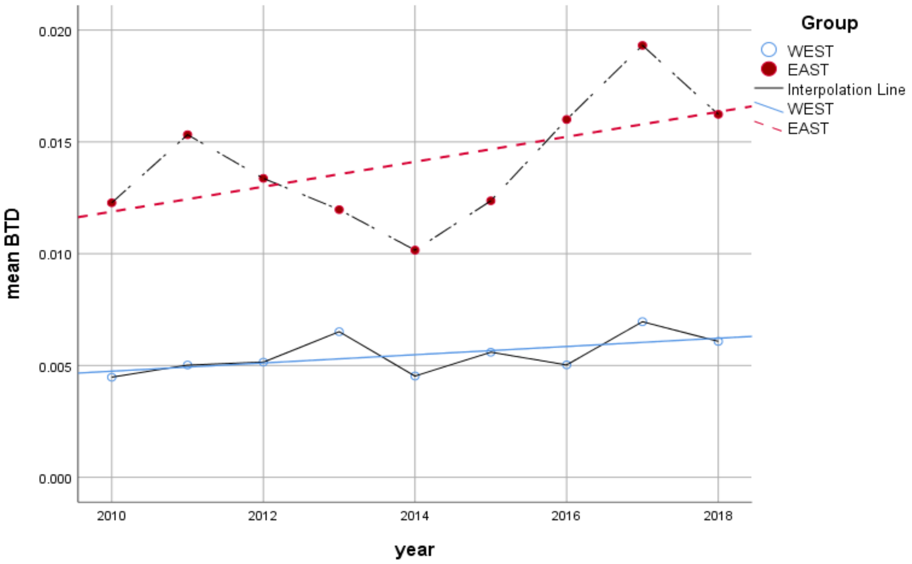
Figure 4: Average CASHETR for Western and Eastern European banks in the sample period (2009–2018)



Source: *Own work*

Next, the CASHETR distributions of Western and Eastern European banks are examined (Figure 4). While Thomsen and Watrin (2018) analyse ETR, this study expands the prior research by considering two more measurements of tax avoidance, i.e., CASHETR and BTD. The analysis shows that the mean CASHETR of Eastern European banks has an upward trend after 2014, while Western European banks' CASHETR grows rapidly after 2015. These years represent the post-implementation period of the EU Capital Requirements Directive IV (CRD IV), which obliged financial institutions to establish the concept of country-by-country reporting (CbCR). Further, the findings show Western European banks experiencing an increase in CASHETR between 2015 and 2017, and a significant decrease after 2017. This change may be interpreted as banks responding to the introduction of CbCR by increasing their CASHETR and decreasing their tax avoidance because they did not know what to expect, what kind of penalty and audit by the tax authorities. Moreover, their tax consulting firms, such as the Big4 firms[17], were not be prepared for implementation of CbCR. Since 2014, financial institutions have been required to disclose tax information for each jurisdiction in which the group is doing its operations (OECD, 2015a). CbCR is seen as the most effective instrument for improving tax transparency, preventing and decreasing tax avoidance activities by MNCs. Therefore, the findings suggest that European banks start to pay more taxes after the implementation of CRD IV. Further, as the post-implementation period records a clear increase in CASHETR, this means that Western and Eastern European banks engage significantly less in tax avoidance activities.

Figure 5: Average BTD for Western and Eastern European banks in the sample period (2009–2018)



Source: *Own work*

[17]The Big4 firms mean Deloitte, PricewaterhouseCoopers (PwC), KPMG and Ernst&Young.

The mean BTD of Western European banks has a slightly growing trend during the sample period. Western European banks have a BTD of between 0.4% and 0.7%, whereas the BTD of Eastern European banks varies between 1% and 2%. Therefore, Eastern European banks have higher BTD values than Western European banks. This indicates that Eastern European banks are more heavily engaged in aggressive tax avoidance activities than Western European banks. Interestingly, the BTDs of Western and Eastern European banks increase after 2014, suggesting that the extent of aggressive tax avoidance grows after the first year of CbCR implementation.

4.1.2 Regression results of aggressive tax avoidance behaviour by Western and Eastern European banks

Table 10 shows the regression results of tax avoidance behaviour for all banks as well as separately for banks in Western and Eastern Europe. Table 11 shows that the ETR time trends are negative and significant for all banks (-0.007) and for Western European banks (-0.007). In addition, the results for Eastern European banks reveal weak statistical significance. In the model that estimates all banks, the interaction coefficient (i.e., EAST*TIME) is statistically significant, indicating that the trends of ETRs are distinct for Western and Eastern European banks during period investigated. All of the presented findings are consistent with Figure 3.

Table 10: Regression results for ETR on TIME with firm-level and country-level control variables

	All Banks			EU West Banks			EU East Banks		
	Coefficient	Std. Error	Sig.	Coefficient	Std. Error	Sig.	Coefficient	Std. Error	Sig.
(Constant)	0.501	0.118	0.000	0.545	0.129	0.000	-0.113	0.307	0.714
TIME	-0.007	0.002	0.003	-0.007	0.002	0.005	0.005	0.003	0.072
EAST	-0.035	0.036	0.337						
EAST*TIME	0.013	0.005	0.017						
SIZE	-0.017	0.005	0.000	-0.019	0.005	0.000	0.011	0.013	0.419
ASSETS_ QUALITY	-0.006	0.004	0.174	-0.007	0.005	0.187	-0.006	0.006	0.284
LIQUIDITY	-0.001	0.000	0.000	-0.001	0.000	0.000	-0.003	0.001	0.000
STR	0.006	0.001	0.000	0.006	0.002	0.000	0.004	0.003	0.283
WWTAX	0.206	0.037	0.000	0.216	0.040	0.000			
CFC_RULES	0.072	0.015	0.000	0.084	0.017	0.000	-0.015	0.027	0.592

Source: *Own work*

Analysis of the control variables shows that higher LIQUIDITY values are associated with lower ETR values in both the Western and Eastern European samples. These findings suggest that highly liquid banks avoid paying taxes more. In the first model which estimates all banks, the country-level variables STR, WWTAX and CFC_RULES are related to higher ETR values. These findings are consistent with what had been expected, suggesting that EU banks less avoid taxes in countries with higher values of statutory tax rates (STR), have adopted a worldwide taxation approach (WWTAX) and CFC rules (CFC_RULES) exist. Higher values of SIZE are associated with higher levels of aggressive tax avoidance (lower ETR values). Like the study by Overesch and Wolff (2018), the results also suggest that larger banks are more likely to be involved in tax avoidance activities.

Table 11: Regression results for individual countries

Model		Unstandardised Coefficients B	Unstandardised Coefficients Std. Error	Standardised Coefficients Beta	T	Sig.	95.0% Confidence Interval for B Lower Bound	95.0% Confidence Interval for B Upper Bound
1	(Constant)	0.657	0.115		5.730	0.000	0.432	0.882
	TIME	-0.007	0.002	-0.088	-3.338	0.001	-0.011	-0.003
	Bulgaria	-0.173	0.068	-0.066	-2.529	0.012	-0.307	-0.039
	Croatia	-0.098	0.041	-0.063	-2.412	0.016	-0.178	-0.018
	Czech	-0.108	0.034	-0.081	-3.128	0.002	-0.175	-0.040
	Hungary	-0.124	0.051	-0.063	-2.433	0.015	-0.224	-0.024
	Lithuania	-0.125	0.041	-0.082	-3.045	0.002	-0.205	-0.044
	Poland	-0.041	0.029	-0.038	-1.422	0.155	-0.098	0.016
	Romania	-0.100	0.043	-0.062	-2.328	0.020	-0.184	-0.016
	Slovak	-0.097	0.046	-0.056	-2.121	0.034	-0.187	-0.007
	Slovenia	-0.236	0.068	-0.090	-3.452	0.001	-0.370	-0.102
	SIZE	-0.014	0.005	-0.083	-2.944	0.003	-0.023	-0.005
	ASSE	-0.002	0.004	-0.011	-0.402	0.688	-0.010	0.007
	LIQ	-0.001	0.000	-0.130	-4.690	0.000	-0.002	-0.001

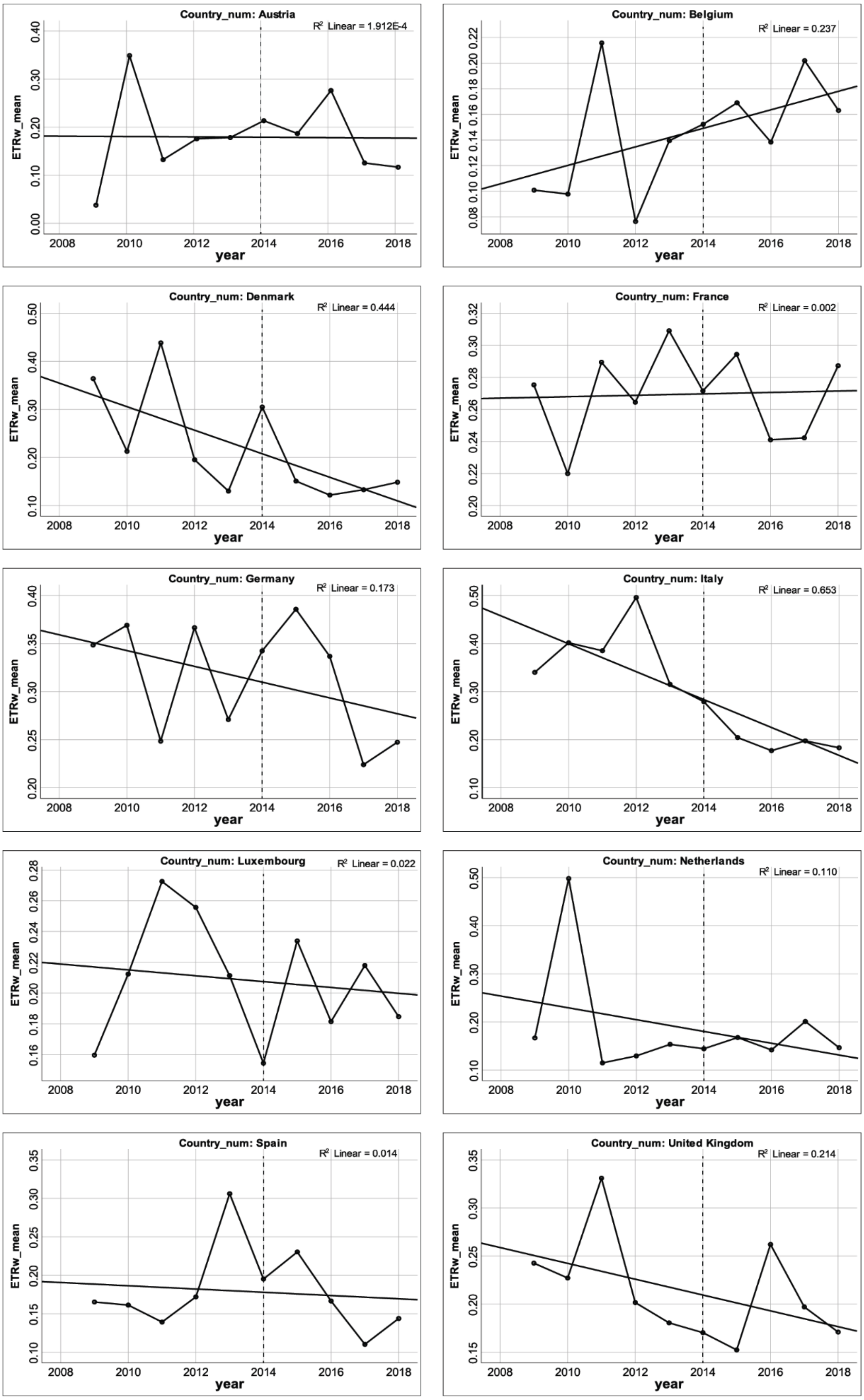
Source: *Own work*

To estimate the association between the tax avoidance behaviour of Western and Eastern European banks, the regression model (1) is expanded by indicator variables for each Eastern European country instead of using the initial divisions (Western and Eastern European banks). Table 11 shows that banks from Western European countries have higher ETR values than banks from all Eastern European countries, excluding Poland (Poland=-0.038; t-value=-1.422). These findings suggest that the mean ETRs of banks domiciled in Poland and banks in Western Europe are not significantly different. This is consistent with the results presented in Figures 2 and 3. Namely, Figure 2 shows that banks domiciled in Poland have the highest mean ETR value (25%), whereas Figure 3 reveals that the mean ETRs of Western European banks are also approximately 25%.

4.1.3 Development of aggressive tax avoidance behaviour in Western European countries

The average ETRs of banks domiciled in Western European countries (Belgium, France, Germany, Luxembourg, Netherlands, Spain) show an intense rise after the year of CbCR implementation (between 2014 and 2015), implying that banks in these countries lowered their aggressive tax avoidance (Figure 6). The ETRs of the remaining Western European countries (Austria, Denmark, Italy, UK) increased after 2014.

Figure 6: Effective tax rate (ETR) of Western European countries

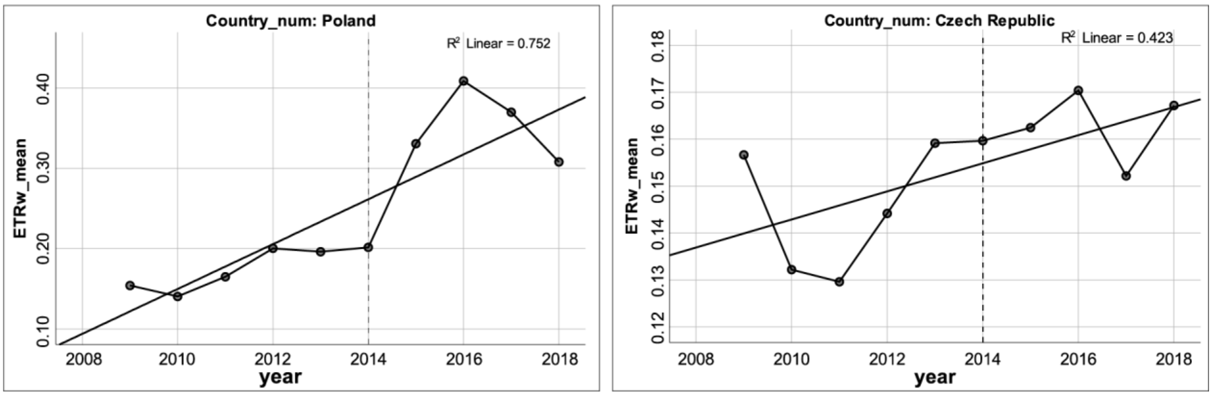


Source: *Own work*

4.1.4 Development of aggressive tax avoidance behaviour in Eastern European countries

As mentioned in the previous sections, the ETRs in Western European countries show a downward trend whereas the ETRs in Eastern European countries have an upward trend. The following section presents the ETRs of two Eastern European countries (Czech Republic and Poland) and the stages in their development over the 10-year period sampled. Eastern European countries (Czech Republic and Poland) show an upward trend in ETRs, implying that these countries are seeing a decline in aggressive tax avoidance (Figure 7).

Figure 7: Effective tax rate (ETR) of the Czech Republic and Poland



Source: *Own work*

It is interesting that a significant impact of CbCR implementation is observed in Czech Republic and Poland. Between 2014 and 2016, the ETR of banks domiciled in Poland grows rapidly. Albeit with lower growth, the same impact is observed in the Czech Republic.

Banks headquartered in Eastern European countries are shown to more aggressive in tax avoidance. An interestingly fundamental observation is the feature these countries share; namely, recent members of the EU as part of its enlargement. It is to be expected these countries will be slower to adopt the new rules and take more time to implement new requirements. Western European countries revealing a decline in aggressive tax avoidance are countries that have been in the EU longer. In general, these countries are better prepared for new regulations and legislation, and their systems respond more effectively to economic, political and policy changes. In the following section, the impact of CbCR implementation on aggressive tax avoidance is also analysed. Since these effects were found in the previous empirical analysis, they are then estimated for the full sample of EU banks.

4.2 Analysis of the level of tax aggressiveness in the pre- and post-implementation period of CbCR

The estimation starts by testing the levels of aggressive tax avoidance in the pre- and post-implementation period of CbCR. Table 12 presents empirical results concerning the relationship between the first proxy of aggressive tax avoidance (ETR) and CbCR_legislation. The DiD coefficient is the interaction term (β_2), denoted as CbCR_legislation*Multinational. The estimate of the main coefficient of interest (β_2) is positive, yet not statistically significant. When the equation is extended with bank-level control variables (column (2)), the interaction CbCR_legislation*Multinational becomes positive and statistically significant. There is a significant change in the level of aggressive tax avoidance post-implementation. In particular, the regression results indicate a 19.6% decrease in the overall tax avoidance engaged in by EU banks in the post-implementation period of CbCR. These findings also hold when country-level control variables are added (column (3)). This analysis reveals a significant reduction in tax avoidance of 16.4%. Consistent with the research of Overesch and Wolff (2018), the findings suggest that an increase in the ETR of EU multinational banks is associated with the implementation of CbCR. These findings are also in harmony with the results of Sudrajad and Hübner (2019) that suggest implementation of Basel III has a significantly positive impact on the aggregate of non-interest income produced in the eurozone banking sector.

The findings presented in column (2) reveal that the variables SIZE and PROA are statistically significant. Consistent Overesch and Wolff's study (2018), the findings show that larger and more profitable banks are more likely to engage in aggressive tax avoidance activities. These results are also consistent with the Sudrajad and Hübner study (2019), which demonstrates a negative and significant relationship between bank size and non-interest income share for the eurozone banking sector. Column (3) shows that the country-level variables WWTAX and TAX_COMPLEXITY are both positive and statistically significant. When a country's tax regulation is complex (TAX_COMPLEXITY) and it has established a worldwide taxation approach (WWTAX), the value of ETR is higher, implying fewer tax avoidance activities. These findings are in line with the empirical results reported by Thomsen and Watrin (2018). Further, consistent with the study by Atwood, Drake, Myers and Myers (2012), ETRs values are higher when a country has adopted a worldwide taxation approach (WWTAX). In Table 12, the negative coefficient of $\text{Multinational}_{i,t}$ implies that multinational banks have lower ETRs, suggesting these banks are more likely to engage in aggressive tax avoidance.

Table 12: DiD regression of ETR on the interaction of the variables CbCR_legislation and Multinational with bank and country characteristics

Variable	(1) Coefficient	(1) Robust Std. Error[a]	(2) Coefficient	(2) Robust Std. Error[a]	(3) Coefficient	(3) Robust Std. Error[a]
Intercept	0.229***	0.022	1.138***	0.377	0.671	0.457
Multinational	0.009	0.014	-0.136***	0.035	-0.088**	0.036
CbCR_legislation*Multinational	0.019	0.022	0.196***	0.049	0.164***	0.051
SIZE			-0.030**	0.014	-0.023	0.016
PROA			-0.020**	0.010	-0.012	0.009
INTANG			0.000	0.000	0.000	0.000
CAPITAL_ADEQUACY			-0.013***	0.003	-0.007	0.005
ASSETS_QUALITY			-0.011	0.008	-0.012	0.009
LIQUIDITY			0.001	0.001	0.000	0.001
DEPOSITS			0.000	0.001	0.000	0.001
STR					0.003	0.004
WWTAX					0.421**	0.191
GDP					-0.006	0.010
TAX_COMPLEXITY					0.070**	0.032
CFC_RULES					0.066	0.050
REPORTING_STRENGTH					-0.013	0.038
Year FIXED EFFECTS	YES		YES		YES	
Adjusted R Squared	0.006		0.075		0.106	

Notes: Year fixed effects are included in the estimations, but not reported.
*, **, *** Indicate statistical significance at the 0.10, 0.05, and 0.01 levels, respectively.
[a] All p-values are based on two-tailed tests and calculated based on robust standard errors or heteroscedasticity-consistent (HC) standard errors. In this modelling, the HC0 type of heteroscedasticity-consistent standard errors is employed.
All variables are defined in Appendix A.

Source: *Own work*

Table 13 presents the results of the DiD regression model (3) interpreting the relationship between CASHETR and the CbCR implementation. The coefficient of interest β_2 is established to be significantly positive. Consistent with H2, the aggressive tax avoidance of banks shown to be 10.3% lower in the post-implementation period. These findings also hold firm and country control variables are included in the regression model. Namely, column (3) shows the CASHETR of banks in the post-implementation period is 24.3% higher than in the pre-implementation period, implying that banks start paying more taxes post-implementation. The findings suggest that increased tax transparency via CbCR implementation can act as a strong tool for preventing and reducing firms' aggressive tax avoidance behaviour.

By including firm-level control variables in the regression, CASHETR is found to be negatively associated with SIZE, ASSETS_QUALITY and DEPOSITS. These results suggest that aggressive tax avoidance is higher for larger banks, banks with high-quality assets and larger deposits. When the regression is extended with country-level control variables, the same results emerge as already presented for ETR: TAX_COMPLEXITY and CFC_RULES are positively associated with the aggressive tax avoidance of firms, suggesting that there is less aggressive tax avoidance in countries that have a complex tax system and established controlled foreign company rules.

Table13: DiD regression of CASHETR on the interaction of the variables CbCR_legislation and Multinational with bank and country characteristics

Variable	(1)		(2)		(3)	
	Coefficient	Robust Std. Error[a]	Coefficient	Robust Std. Error[a]	Coefficient	Robust Std. Error[a]
Intercept	0.227***	0.030	1.736***	0.493	1.603***	0.575
Multinational	0.019	0.023	-0.082*	0.047	-0.079	0.054
CbCR_legislation*Multinational	0.103**	0.044	0.251***	0.084	0.243***	0.087
SIZE			-0.049**	0.018	-0.043**	0.021
PROA			-0.001	0.015	0.005	0.017
INTANG			0.000	0.000	0.000	0.000
CAPITAL_ADEQUACY			-0.014***	0.005	-0.010	0.008
ASSETS_QUALITY			-0.018	0.012	-0.017	0.014
LIQUIDITY			0.000	0.001	0.000	0.001
DEPOSITS			-0.002**	0.001	-0.002	0.001
STR					-0.001	0.008
WWTAX					0.081	0.162
GDP					0.007	0.022
TAX_COMPLEXITY					0.085*	0.047
CFC_RULES					0.149*	0.078
REPORTING_STRENGTH					-0.123*	0.064
Year FIXED EFFECTS	YES		YES		YES	
Adjusted R Squared	0.049		0.140		0.148	

Notes: Year fixed effects are included in the estimations, but not reported.
*, **, *** Indicate statistical significance at the 0.10, 0.05, and 0.01 levels, respectively.
[a] All p-values are based on two-tailed tests and calculated based on robust standard errors or heteroscedasticity-consistent (HC) standard errors. In this modelling, the HC0 type of heteroscedasticity-consistent standard errors is employed.
All variables are defined in Appendix A.

Source: *Own work*

Table 14 presents the results concerning the relationship between book-tax difference (BTD) and CbCR implementation. The coefficient of interest β_2 is positive and statistically significant, although the value is slightly greater than zero in each regression estimate presented in columns (1), (2) and (3). Still, it is a negligibly small impact. The findings show statistically significant and positive relationship between BTD and bank-level controls such as PROA, ASSETS_QUALITY, LIQUIDITY and DEPOSITS. Consistent with the Thomsen and Watrin study (2018), no relationship is established between ETR and REPORTING_STRENGTH. Nevertheless, a statistically significant and negative relationship is shown between BTD and REPORTING_STRENGTH. These findings support the expectation that firms' tax avoidance is lower in countries with strict accounting and reporting standards. Firms in these countries are obliged to follow strong reporting and accounting standards as they prepare their financial statements. STR is also established to be positively related to BTD. When a country has a higher statutory tax rate, BTDs also increase. These empirical results suggest that EU banks are more likely to avoid taxes in countries with higher statutory tax rates.

Table 14: DiD regression of BTD on the interaction of the variables CbCR_legislation and Multinational with bank and country characteristics

Variable	(1)		(2)		(3)	
	Coefficient	Robust Std. Error[a]	Coefficient	Robust Std. Error[a]	Coefficient	Robust Std. Error[a]
Intercept	0.008***	0.001	-0.002	0.008	0.006	0.009
Multinational	0.001	0.001	0.001	0.001	0.001	0.001
CbCR_legislation*Multinational	0.003**	0.001	0.002*	0.001	0.003**	0.001
SIZE			0.000	0.000	0.000	0.000
PROA			0.005***	0.001	0.005***	0.001
INTANG			0.000	0.000	0.000	0.000
CAPITAL_ADEQUACY			0.000	0.000	0.000	0.000
ASSETS_QUALITY			0.002***	0.001	0.002***	0.001
LIQUIDITY			0.000***	0.000	0.000***	0.000
DEPOSITS			0.000**	0.000	0.000	0.000
STR					0.000**	0.000
WWTAX					0.003	0.004
GDP					0.000	0.001
TAX_COMPLEXITY					0.001	0.001
CFC_RULES					0.000	0.002
REPORTING_STRENGTH					-0.004***	0.001
Year FIXED EFFECTS	YES		YES		YES	
Adjusted R Squared	0.033		0.647		0.643	

Notes: Year fixed effects are included in the estimations, but not reported.
*, **, *** Indicate statistical significance at the 0.10, 0.05, and 0.01 levels, respectively.
[a] All p-values are based on two-tailed tests and calculated based on robust standard errors or heteroscedasticity-consistent (HC) standard errors. In this modelling, the HC0 type of heteroscedasticity-consistent standard errors is employed.
All variables are defined in Appendix A.

Source: *Own work*

4.3 Analysis of the relationship between tax aggressiveness and level of CbCR implementation

Table 15 shows the results regarding the relationship between aggressive tax avoidance and level of CbCR implementation (i.e., full CbCR implementation, full non-implementation, partial implementation). The main explanatory variable in the regression model (4) is CbCR_implementation. When this variable is included in the process of modelling the dependent variables (ETR, CASHETR and BTD), CbCR_implementation is shown to be significantly related to CASHETR. These results suggest that EU banks with partial CbCR implementation are more tax-aggressive than banks that have fully implemented CbCR. The findings also reveal there is no difference between ETR and BTD when CbCR implementation level is tested. Further, the expectation that no difference exists in the relationship between two proxies of aggressive tax avoidance (ETR and BTD) and CbCR implementation level may be based on the assumption that managers still use different accounting tools in companies' financial and tax reporting. However, the empirical results show that EU banks started paying more taxes in 2014.

Table 15: Regression of ETR, CASHETR and BTD on the category of predictor CbCR_implementation with country characteristics (employing a univariate general linear model)

Variable	ETR		CASHETR		BTD	
	Coefficient	Robust Std. Error[a]	Coefficient	Robust Std. Error[a]	Coefficient	Robust Std. Error[a]
Intercept	0.260***	0.017	0.275***	0.067	0.013***	0.002
[CbCR_implementation = 0 [b]]	-0.012	0.021	0.003	0.037	0.001	0.001
[CbCR_implementation = 1 [b]]	-0.001		-0.080*	0.046	-0.001	0.001
[CbCR_implementation = 2[b]]	0[c]		0[c]		0[c]	
STR[d]						
WWTAX[d]						
GDP	0.001	0.002	0.008	0.006	0.000***	0.000
CFC_RULES[d]						
REPORTING_STRENGTH[c]						
TAX_COMPLEXITY	0.003*	0.018	-0.023	0.032	0.000	0.001
TREND	-0.008***	0.003	-0.017**	0.007	0.000**	0.000
Bank FIXED EFFECTS	YES		YES		YES	
Adjusted R Squared	0.254		0.129		0.612	

Notes: Year fixed effects are included in the estimations, but not reported.
*, **, *** Indicate statistical significance at the 0.10, 0.05, and 0.01 levels, respectively.
[a] All p-values are based on two-tailed tests and calculated based on robust standard errors or heteroscedasticity-consistent (HC) standard errors. In this modelling, the HC0 type of heteroscedasticity-consistent standard errors is employed.
[b] CbC Report has a value 0 if the report is not publicly available on a bank's website and nor is the part of other available reports of the bank; CbC Report has a value 1 if the report is available on the bank's website, but does not contain all of the necessary information; and a value of 2 if the report is publicly available on the bank's website and was prepared following all the instructions prescribed by the OECD and the EU.
[c] This parameter is set to zero because it is redundant.
[d] Variables excluded from the modelling due to collinearity between dependent variables.
All variables are defined in Appendix A.

Source: *Own work*

Use of the CbCR implementation data may be seen as a limitation because the variable of interest (CbCR_implementation) has imbalances in the sample caused by data unavailability and the short time period of CbCR implementation. In the future, researchers are hence invited to conduct research on level of CbCR implementation and how it affects the tax aggressiveness of firms. As time goes on, the number of banks with data for categories 1 and 2 will rise and the sample will become fully balanced. This thus acts as a suggestion for future research as that would extend the very limited literature on CbCR.

4.4 Sensitivity analysis

Due to missing values in the financial information available from the Fitch Connect database, additional analysis is performed. There is a need to replicate the given results when using a larger sample. The results are repeated by conducting DiD regression over the fully available sample in which missing data are estimated by using the fully conditional specification (FCS) procedure and the Markov chain Monte Carlo (MCMC) method.

Table 16: DiD regression of ETR, CASHETR and BTD on the interaction of the variables CbCR_legislation and Multinational with bank and country characteristics

Variable	ETR		CASHETR		BTD	
	Coefficient (Robust Std. Error[a])	Coefficient (Robust Std. Error[a])	Coefficient (Robust Std. Error[a])	Coefficient (Robust Std. Error[a])	Coefficient (Robust Std. Error[a])	Coefficient (Robust Std. Error[a])
Intercept	0.171***	0.498***	0.133**	0.187	0.008***	0.061***
	(0.042)	(0.108)	(0.065)	(0.130)	(0.002)	(0.005)
Multinational	0.013	-0.025*	0.063***	-0.032*	0.004***	-0.001*
	(0.012)	(0.013)	(0.016)	(0.017)	(0.001)	(0.000)
CbCR_legislation*Multinational	0.035**	0.033*	0.074***	0.064**	0.002	-0.002*
	(0.017)	(0.019)	(0.025)	(0.025)	(0.002)	(0.001)
SIZE		-0.031***		-0.029***		-0.000**
		(0.004)		(0.005)		(0.000)
PROA		-0.003		0.013***		0.004***
		(0.002)		(0.002)		(0.000)
LEVERAGE		0.336***		0.874***		-0.018***
		(0.049)		(0.073)		(0.003)
INTANG		0.000		0.000***		0.000
		(0.000)		(0.000)		(0.000)
CAPITAL_ADEQUACY [b]						
ASSETS_QUALITY		-0.007		-0.014***		0.002***
		(0.004)		(0.005)		(0.000)
LIQUIDITY		-0.001***		-0.001***		0.000***
		(0.000)		(0.000)		(0.000)
DEPOSITS		0.000		-0.001**		0.000***
		(0.000)		(0.000)		(0.000)

Source: *Own work*

Table 16: DiD regression of ETR, CASHETR and BTD on the interaction of the variables CbCR_legislation and Multinational with bank and country characteristics (continued)

STR		0.006***		0.006***		0.000***
		(0.001)		(0.001)		(0.000)
WWTAX		0.150***		0.003		0.000
		(0.032)		(0.035)		(0.001)
GDP		-0.002		0.006*		0.000
		(0.003)		(0.003)		(0.567)
TAX_COMPLEXITY		0.026**		-0.033**		0.000
		(0.011)		(0.015)		(0.723)
CFC_RULES		0.065***		0.037**		-0.001
		(0.011)		(0.016)		(0.001)
REPORTING_STRENGTH		-0.007		-		0.000
		(0.013)		0.088***		(0.001)
				(0.018)		
Year FIXED EFFECTS	NO	YES	NO	YES	NO	YES
Bank FIXED EFFECTS	YES	NO	YES	NO	YES	NO
Country FIXED EFFECTS	YES	NO	YES	NO	YES	NO
Adjusted R Squared	0.221	0.110	0.160	0.194	0.079	0.773

Notes: Year, Bank and Country fixed effects are included in the estimations, but not reported.
*, **, *** Indicate statistical significance at the 0.10, 0.05, and 0.01 levels, respectively.
[a] All p-values are based on two-tailed tests and calculated based on robust standard errors or heteroscedasticity-consistent (HC) standard errors. In this modelling, the HC0 type of heteroscedasticity-consistent standard errors is employed.
[b] Variables excluded from the modelling due to collinearity between dependent variables.
All variables are defined in Appendix A.

Source: *Own work*

The results of the analysis are consistent and support the primary estimation that was presented. When completely available data with imputed missing data are analysed and when the dependent variable is ETR, the estimated value of coefficient β_2 is not higher than 16.4% (Table 12) and 3.5% (Table 16). In the CASHETR analysis, the estimated value of coefficient β_2 is 24.3% (Table 13) and 7.4% (Table 16). When BTD is estimated on the original sample, the estimated value of coefficient β_2 (which is statistically significant) is low and equals 0.2%, it is also low and statistically significant as well as negative (-0.2%) in the repeated estimation on the fully available sample. The sign is in accordance with economic theory, i.e., as presented by McGuire, Omer and Wang (2012). Further, qualitatively similar results are established when the sensitivity model is extended with bank and country fixed effects.

5 DISCUSSION OF THE ANALYSIS AND RESULTS

5.1 Discussion

The first part of the doctoral dissertation focussed on the theoretical aspects of aggressive tax avoidance. By providing an in-depth conceptual framework for tax accounting research terms, the doctoral dissertation clarifies issues regarding the non-existence of straightforward explanations of tax accounting terms. The conceptual framework provides definitions of tax avoidance and tax aggressiveness and identifies the main differences between these constructs. Further, the dissertation gives a clear definition of a bank's tax aggressiveness. A detailed explanation of social tax avoidance terms like tax morale and CSR is also included. Most importantly, the dissertation answers the question of how CbCR is viewed and established by institutions, what are the benefits and costs of such reporting, and what does such reporting involve. In addition, the role of tax avoidance, tax aggressiveness and CbCR in academic research is further explained through the literature review set out in this theoretical part of the dissertation.

The second part of the dissertation looked at the implementation of CbCR and its effects on the tax aggressiveness of multinational banks by answering the following research questions: (1) Does the implementation of CbCR reduce the tax aggressiveness of EU banks? (2) Does the level of CbCR implementation (1. full implementation, 2. full non-implementation, 3. partial implementation) impact the tax aggressiveness of EU banks? These effects of CbCR were examined using a sample of 1,950 firm-year observations from 25 European Union countries. Country-level data from various sources (World Bank database, KPMG corporate tax rates table, World Competitiveness Reports, the related study by Johansson, Skeie and Sorbe (2016)) were collected. Financial data for European banks were obtained from the Fitch Connect database. In addition, information was obtained on the level of CbCR implementation from various documents like annual reports, financial statements, CbC reports or CSR reports. In particular, data were collected on whether a bank has fully implemented CbCR, whether implementation was fully missing or CbCR had only been partially implemented. Analysis of the ETR, CASHETR and BTD of European banks was conducted in the pre- and post-adoption periods to determine the effect of CbCR implementation. A significant decrease in the aggressive tax avoidance of EU banks in the CbCR post-implementation period was shown. The results suggest that banks which publicly disclose their CbC Reports and have fully implemented CbCR are less tax aggressive than banks that have only partly implemented CbCR. Further, banks operating in countries with complex tax regimes and controlled foreign company rules (CFC rules) in place are revealed to avoid taxes less often. A significant decrease in aggressive tax avoidance is found when analysing the CASHETR for banks that have fully implemented CbCR. This empirical evidence supports the general expectations that banks have paid more taxes in the post-adoption period (from 2014 onwards). In addition, BTD is found to be lower in countries with strict auditing and reporting standards, indicating less aggressive tax avoidance by EU banks. Finally, the empirical results suggest that increased tax transparency following implementation of CbCR can act as an important instrument for reducing and preventing aggressive tax avoidance activities by multinational banks.

In the third part of the doctoral dissertation, the analyses focused on the institutional, economic and political aspects of aggressive tax avoidance taking differences between the countries in which banks are domiciled into consideration. Comparing the institutional and economic structure of EU countries led to the sample being divided into two, i.e., Western and Eastern European countries. First, this part of the dissertation provided answers to the following research question: What is the difference in tax aggressiveness of banks domiciled in countries in Western Europe and those in Eastern Europe? Using the same data as for the previous empirical analysis, both measured proxies of aggressive tax avoidance, ETR and CASHETR, were shown to be higher in Western European banks. Further, the BTD of Western European banks was found to lower than the BTD of Eastern European banks, indicating that the latter banks engage more in aggressive tax avoidance behaviour. Interestingly, the ETR and CASHETR of Western European banks see a different trend. On one hand, Western European banks show a downward trend in ETR over the 10-year period under study. On the other hand, these banks reveal a rapid upward of CASHETR after 2015. Similarly, Eastern European banks have an upward trend of CASHETR especially after 2014. The main explanation for this is that banks start paying more taxes due to the pressure of the CRD IV requirements, which indicates enormous differences in taxes paid in the post-implementation period of CbCR compared to the period before. Second, the doctoral dissertation answers the research question: What is the role played by a country's tax system characteristics in banks' tax aggressiveness in Western and Eastern European countries? The results show that EU banks avoid taxes less in countries that have higher values for statutory tax rates (STR), established a worldwide taxation approach (WWTAX) and where CFC rules are in place (CFC_RULES). Further, the findings suggest that banks operating in the economies that for several decades have been market-based engage less in aggressive tax avoidance behaviour than banks in transition economies. Moreover, tax avoidance behaviour is observed less often in countries with older political systems characterised by political parties with a long lineage.

5.2 Theoretical contribution

As noted in various parts of the dissertation, aggressive tax planning activities are associated with organisational incentives (McGuire, Omer & Wilde, 2014; Gallemore & Labro, 2015; Higgins, Omer & Phillips, 2015), corporate social responsibility (Keung, Quiang & Hao, 2013), executive incentives (Chyz, 2013; Francis, Iftekhar, Wu & Yan, 2014), shareholder influence (Cheng, Huang, Yinghua & Stanfield, 2012), and the external audit firm impact (McGuire, Omer & Wang, 2012). Further, several studies found a significant relationship between reputational effects and corporate tax planning activities (Graham, Hanlon, Shevlin & Shroff, 2014; Hoopes, Robinson & Slemrod, 2018). Current literature also provides substantial evidence that banks shift their profits to low-tax countries in order to save on taxes (Merz & Overesch, 2016; Bouvatier, Capelle-Blancard & Delatte, 2017). In addition, several studies reveal how MNCs use tax havens to reduce their tax burden and that MNCs with subsidiaries located in tax havens significantly minimise their tax burden (Dyreng & Lindsey, 2009; Marckle & Shackelford, 2012; Dyreng, Lindsey & Thornock, 2013). Nevertheless, the concept of tax aggressiveness in the banking sector remains largely unexplored. Most closely related to the presented study are the findings of Overesch and Wolff (2018) and Joshi, Outslay and Persson (2020). These authors suggest that CbCR can be used as an effective tool by tax authorities and policymakers to curb corporate tax avoidance activities (Overesch & Wolff, 2018) and tax-driven income shifting (Joshi, Outslay & Persson, 2020). While Joshi, Outslay and Persson (2020) present limited results concerning the decline in the tax avoidance behaviour of EU banks in the post-adoption period, Overesch and Wolff (2018) find strong evidence that public CbCR is related to lower tax avoidance behaviour in the European financial sector. This literature was extended by analysing the further impact of CbCR implementation on the aggressive tax avoidance behaviour of MNCs. More specifically, whether the level of CbCR implementation (1. full implementation, 2. full non-implementation, 3. partial implementation) carried out by EU banks changes the level of their tax aggressiveness was assessed. To the best of the author's knowledge, this is the first empirical study to examine the relationship between the level of implementation of the newly introduced CbCR and tax aggressiveness. In addition, the dissertation contributes to the literature on the tax avoidance behaviour of the banking sector. It is well known that banks' tax avoidance behaviour is still underexplored and, accordingly, the dissertation makes two significant theoretical contributions to the literature.

In the dissertation, a contribution is made to the tax accounting literature by providing an insight into the role of CbCR implementation on the aggressive tax avoidance of banks. Thus, the empirical results are important as they examine whether the level of CbCR implementation impacts the level of banks' tax aggressiveness. The study's results show it is important to observe that increased tax transparency in the form of CbCR can only mitigate aggressive tax avoidance activities when firms fully comply with the regulation. Further, even though multinational EU banks use different accounting tools to present their preferred pre-tax income, these banks have paid more taxes following the implementation of CbCR. This is the first study to provide empirical evidence on tax avoidance and compliance with the newly introduced CbCR regulation under CRD IV. Therefore, the first presented contribution responds to the call made by authors to further research the effects of tax avoidance (Hanlon & Heitzman, 2010).

The second theoretical contribution is the extension of the tax policy literature by presenting strong empirical evidence on tax avoidance by banks domiciled in Western and Eastern European countries. Further, this doctoral dissertation extends the literature on political behaviour and political economy by providing an in-depth theoretical and empirical analysis of the distinction between banks in Western and Eastern European countries. This is the first study to establish a link between tax avoidance behaviours on one hand and a country's economic and political development on the other. The theoretical explanation and empirical analysis provided show higher mean ETRs of Western European banks, indicating that banks in Western European countries engage in tax avoidance activities less often than banks in Eastern European countries. Further, EU banks were also shown to avoid taxes less often in countries that have higher statutory tax rates, established a worldwide taxation approach, and controlled foreign company (CFC) rules in place.

5.3 Methodological contribution

The dissertation holds several implications for the methodology of tax accounting research. Unlike previous studies (Keung, Qiang & Hao, 2013; Francis, Ren & Wu, 2017; Thomsen & Watrin, 2018), country-level control variables were included in the empirical model, considering that every country has its own tax system and statutory tax rate, which constitutes an important issue while controlling in the tax aggressiveness analysis. This literature is also extended by analysing the further impact of CbCR implementation on the tax aggressiveness behaviour of MNCs. More specifically assessed was whether the level of CbCR implementation (1. full implementation, 2. full non-implementation, 3. partial implementation) by EU multinational banks changes the level of their tax aggressiveness. To the author's knowledge, this is the first empirical study to develop a model of the relationship between level of implementation of the newly introduced CbCR and tax aggressiveness. Further, the literature is enriched on a methodological basis by analysing the difference in the tax avoidance behaviour of banks domiciled in Western and Eastern European countries. This is the first study to analyse the differences between ETR, CASHETR, and BTD in banks domiciled in Western and Eastern Europe.

The dissertation contributes to the literature that estimates the cross-sectional determinants of tax aggressiveness among different countries by demonstrating that CbCR is associated with a country's tax system characteristics. Another contribution to CbCR research is the presented empirical results derived from a unique hand-collected database in terms of the level of a bank's CbCR implementation. Therefore, the literature is richer with respect to aggressive tax avoidance by providing how distinct proxies of aggressive tax avoidance change with level of CbCR implementation. While Thomsen and Watrin (2018), Dyreng, Hoopes and Wilde (2016) and Markle and Shackelford (2012) considered industrial firms, results for the banking sector are given in this dissertation. This is the first research to develop a model of tax aggressiveness for banks using different bank-level and country-level controls.

5.4 Practical contribution

The findings of the doctoral dissertation may be of particular interest to tax authorities, the European Commission, the OECD, central banks and other regulators concerned with the ever-growing gap between reported and taxable income. Here, it is important to emphasise that the efforts of tax authorities to reduce and prevent the tax avoidance behaviour of MNCs have a significant positive effect because banks' tax payments increased after 2015, i.e., in post implementation of CbCR. These findings hold important policy implications for the future of CbCR and tax legislation development as well as further improvement of the tax system in EU countries. Moreover, bank managers must consider how to improve tax reporting through CbCR in order to increase reputation and public trust and thereby gain the faith of investors and decision-makers in the bank's business activities.

5.5 Limitations of the research

Although the doctoral dissertation provides new empirical results in tax accounting research, it is not without limitations. The first limitation relates to the missing values in the database. One must be aware that the dataset is limited by the unavailability of financial information in the Fitch Connect database. Therefore, additional analysis was performed to replicate the given results when estimating a larger sample. By running a DiD regression on the fully available sample, the results were replicated while missing data were estimated using the Markov chain Monte Carlo (MCMC) method and the FCS procedure (explained in detail in section 4.4). However, the results of the analysis are consistent and support the first estimate. Moreover, qualitatively similar results emerge when the sensitivity model is extended to include bank and country fixed effects.

5.6 Suggestions for future research

The dissertation provides several interesting and important suggestions for future research. The main suggestion for the empirical literature on overall tax avoidance concerns the definition and measurement of tax avoidance. Researchers are encouraged to provide in-depth meta-analysis of the tax constructs and empirical proxies for their measurement used in previous studies. Researchers are also encouraged to investigate the relationships between tax aggressiveness and ownership structure, type of investment and organisational form choice because their influence on tax aggressiveness remains unclear.

Certainly, one area of research calling for more work is CbCR. Since CbCR has been obligatory for all MNCs since 2017, the database of CbC Reports will be available for further research and analysis. The most interesting topic in this area, which is also a direction for the author of this dissertation's future research, is how CbCR affects bank performance. While it is well known that managers use various accounting tools and policies to minimise profit and report their firms' lower tax income in order to pay less tax, the question is how managers maintain a good bank performance in this situation. Therefore, future research of the author will focus on the ways CbCR impacts bank performance. The presented results showing that banks have been paying more taxes since CbCR was implemented mean that it would particularly interesting to analyse how this affects bank performance. Another interesting research question relates to the study of how CbCR and audit firm together affect the tax avoidance engaged in by multinational banks. This is another research question the author shall analyse in future research. Audit firm expertise is closely related to banks' tax avoidance behaviour, suggesting that the overall expertise of an external audit firm is associated with higher tax avoidance (e.g., McGuire, Omer & Wang, 2012). It would be especially interesting to observe how CbCR and audit firm together affect the tax avoidance behaviour of EU multinational banks. In addition, the author proposes to seek to establish a link between CbCR and investors' decision-making to investigate whether investors take CbCR into account while making decisions.

In conclusion, the introduction of CbCR creates many opportunities for future research in tax accounting and CbCR is certainly an interesting aspect to study in the future.

CONCLUSION

Despite the increased tax transparency and rapid changes in the field of MNCs' tax disclosure, the recent literature completely lacks empirical evidence on the effects of tax disclosure on companies' aggressive tax behaviour. Since 2014, pursuant to the EU's Capital Requirements Directive IV (Article 89), CbCR has been mandatory for all financial institutions headquartered in the EEA region (Overesch & Wolff, 2018), while the European Commission and the OECD have required all MNCs to disclose tax information in the form of an annual CbC Report since 2017. Implementation of CbCR for MNCs and the European banking industry offers a great opportunity to investigate the effectiveness of tax transparency. Therefore, in the doctoral dissertation, analysis was conducted on a sample of EU banks to examine whether the obligation to increase tax transparency with regard to CbCR is effective to reduce aggressive tax avoidance activities in the banking sector. The assessment of the impact of the new CbCR legislation on the tax avoidance behaviour of companies certainly substantial and of interest to the European Commission, the OECD, tax authorities, and the academic community.

The first part of the empirical analysis focused on estimating the effects of CbCR on the tax aggressiveness of multinational banks operating in the EU. The empirical analysis shows that adoption of the CbCR legislation significantly decreases the level of tax aggressiveness of EU multinational banks. A difference was also established in the level of tax aggressiveness between banks with partial and full-implementation of CbCR. These findings show that banks that publicly disclose their CbC Reports and have fully implemented CbCR are less tax aggressive than banks that have only party implemented CbCR. On the bank level, the results reveal that larger and more profitable banks are associated with higher levels of tax aggressiveness. Moreover, banks with larger deposits and high-assets quality are more tax-aggressive. On the country level, banks were shown to be less likely to evade taxes in countries that have complex tax regimes and controlled foreign company rules (CFC rules) in place. The results also show strong empirical evidence of reduced tax aggressiveness by EU countries that have adopted a worldwide approach to taxation. Further, BTD was found to be lower in those EU countries that have strong reporting and auditing standards.

The research revealed there is no difference between ETR and BTD when CbCR implementation level is tested. While analysing the CASHETR ratio, it is necessary to emphasise its relationship with cash taxes paid by a bank. The research findings suggest that the requirement of CbCR public disclosure has motivated managers to ensure their bank pays more taxes, with these findings being in line with the expectations. The second important finding presented in the dissertation is that there is no difference in the relationship between ETR and BTD on one hand and CbCR implementation level on the other. More precisely, this indicates that managers use different accounting instruments in financial and tax reporting in order to present the results they desire for their bank. However, the research demonstrates that banks started to pay more taxes in 2014 (the first year of CbCR implementation).

The second part of the empirical analysis considered the institutional and economic aspects of tax aggressiveness. To fully understand the tax avoidance behaviour of banks in the EU, one most take account of the differences between the countries in which the banks operate. Based on the existence of different institutional and economic structures among the countries, the EU was divided into two distinct parts of Western and Eastern Europe. To present a comprehensive description of the tax avoidance behaviour of banks in Western and Eastern European countries, focus was given to the differences between the market economies and political systems of these parts. In addition, the role of a country's tax system characteristics is underlined along with the social perspective on the tax avoidance behaviour of EU banks domiciled in Western and Eastern European countries. Using a sample of 1,950 firm-year observations from Western and Eastern European countries, this research has investigated changes in tax avoidance behaviour over the 10-year period under study. Surprisingly, the results show an upward trend in the ETRs of Eastern European banks and a downward trend in the ETRs of banks in Western Europe. These results are consistent with previous findings by Overesch and Wolff (2018), meaning that larger and more profitable firms are more tax aggressive. The presented descriptive statistics show that Western European banks are larger and more profitable than Eastern European banks. When analysing the CASHETRs, similar results were found, but with bigger changes in the CASHETR values in the period being studied. The results also show that the mean ETRs and CASHETRs of Western European banks are higher than for Eastern European banks. An upward trend of the mean BTD of banks in both Western and Eastern European countries with a high difference between their values is also found. Hence, the BTDs of Eastern European banks are higher than the mean BTDs of Western European banks, indicating that banks in Western Europe engage in tax avoidance behaviour less.

The doctoral dissertation contributes to both the previous literature and policymakers' knowledge. The research entailed extends the literature by providing empirical results concerning the effects of CbCR implementation and the level of tax aggressiveness depending on whether CbCR has been fully, partially or not implemented. In addition, the improved empirical model on tax aggressiveness, which includes a country's tax system characteristics and firm-level control indicators, was analysed. The literature was also extended by providing strong theoretical analysis of the different economic and institutional development in European countries. It seems that banks domiciled in developed countries with a progressive tax regime and a stable political system engage less in tax avoidance behaviour than banks domiciled in transition countries. The policy implications of the findings are therefore significant. Improvement of the tax system and political stability could be a rational way of gaining trust in public institutions. This confidence and loyalty of the citizens of a country can reduce tax avoidance behaviour on both the individual and firm levels.

To conclude the doctoral dissertation, these results are seen as holding considerable implications for the EU's fight against tax avoidance and for the future development of CbCR legislation. Overall, the empirical results presented show policymakers that CbCR can act as an effective tool for preventing aggressive tax avoidance. Future development and further refinements of CbCR, as well as its adjustment to different countries' characteristics, could male this instrument even more powerful for deterring and preventing companies' aggressive tax avoidance activities.

REFERENCES

1. Abuselidze, G. (2012). Optimal Tax Burden and Budget System â€ "the Factor of Macroeconomical Stabilization. *Journal of Applied Finance & Banking*, *2*(6), 1-9.
2. Ahmad, N. A. (2008). Dead men working: time and space in London's (illegal') migrant economy. *Work, employment and society*, *22*(2), 301-318.
3. Akhigbe, A., McNulty, J. E. & Stevenson, B.A. (2013). How does transparency affect bank financial performance? *International Review of Financial Analysis*, *29*(C), 24-30.
4. Albertazzi, U. & Gambacorta, L. (2010). Bank profitability and taxation. *Journal of Banking & Finance*, *34*(11), 2801-2810.
5. Alesina, A., & Giuliano, P. (2015). Culture and institutions. *Journal of economic literature*, *53*(4), 898-944.
6. Aliprandi G., Barake M. & Chouch P.E. (2021). Have European Banks left the tax havens? Evidence from country-by-country reporting data. *EU Tax Observatory*. Retrieved June 17, 2022 from: https://halshs.archives-ouvertes.fr/halshs-03350725/document
7. Allen, A., Francis, B. B., Wu, Q. & Zhao, Y. (2016). Analyst coverage and corporate tax aggressiveness. *Journal of Banking & Finance*, *73*, 84-98.
8. Alm, J. (2014). Does an uncertain tax system encourage "aggressive tax planning"? *Economic Analysis and Policy*, *44*(1), 30-38.
9. Amidu, M., Kwakye, T. O., Harvey, S. & Yorke, M. S. (2016). Do firms manage earnings and avoid tax for corporate social responsibility? Retrieved May 15, 2019 from: http://ugspace.ug.edu.gh/bitstream/handle/123456789/24546/CE8724258918.pdf?sequence=1
10. Amir, E., Guan, Y. & Oswald, D. (2010). The effect of pension accounting on corporate pension asset allocation. *Review of Accounting Studies*, *15*(2), 345-366.
11. Andries, K., Gallemore, J. & Jacob, M. (2017). The effect of corporate taxation on bank transparency: Evidence from loan loss provisions. *Journal of Accounting and Economics*, *63*(2), 307-328.
12. Angrist, J. D. & Krueger, A. B. (1999). Empirical strategies in labor economics. In *Handbook of labor economics* (Vol. 3, pp. 1277-1366). Elsevier.
13. Armstrong, C. S., Blouin, J. L. & Larcker, D. F. (2012). The incentives for tax planning. *Journal of accounting and economics*, *53*(1-2), 391-411.
14. Armstrong, C. S., Blouin, J. L., Jagolinzer, A. D. & Larcker, D. F. (2015). Corporate governance, incentives, and tax avoidance. *Journal of Accounting and Economics*, *60*(1), 1-17.
15. Atwood, T. J. & Lewellen, C. (2019). The complementarity between tax avoidance and manager diversion: Evidence from tax haven firms. *Contemporary Accounting Research*, *36*(1), 259-294.

16. Atwood, T. J. & Lewellen, C. (2019). The complementarity between tax avoidance and manager diversion: Evidence from tax haven firms. *Contemporary Accounting Research*, *36*(1), 259-294.
17. Atwood, T.J., Drake, M.S., Myers, J.N. & Myers, L.A. (2012). Home country tax system characteristics and corporate tax avoidance: International evidence. *The Accounting Review*, *87*(6), 1831-1860.
18. Auerbach, A. J., Devereux, M. P. & Simpson, H. (2008). *Taxing corporate income* (No. w14494). National Bureau of Economic Research.
19. Australian Taxation Office (ATO). (2013). Improving the transparency of Australia's corporate tax system. Retrieved August 18, 2016 from: https://www.ato.gov.au/Business/Large-business/In-detail/Large-businessbulletin/2013/Large-business-bulletin--September-2013/?page=5
20. Badertscher, B. A., Katz, S. P. & Rego, S. O. (2013). The separation of ownership and control and corporate tax avoidance. *Journal of accounting and economics*, *56*(2-3), 228-250.
21. Balakrishnan, K., Blouin, J. & Guay, W. (2012). Does Tax Aggressiveness Reduce Corporate Transparency? Working Paper, University of Pennsylvania.
22. Balakrishnan, K., Blouin, J., & Guay, W. (2012). Does tax aggressiveness reduce corproate transparency. *Wharton working paper.*
23. Bankman, J. (2004). The tax shelter battle. *The crisis in tax administration*, *9*, 13.
24. Barrera, R., & Bustamante, J. (2018). The rotten apple: Tax avoidance in Ireland. *The International Trade Journal*, *32*(1), 150-161.
25. Barrios, S., Ivaškaitė-Tamošiūnė, V., Maftei, A., Narazani, E. & Varga, J. (2020). Progressive tax reforms in flat tax countries. *Eastern European Economics*, *58*(2), 83-107.
26. Bärsch, S. E., Engelen, C. & Färber, N. (2016). Die Dokumentation von Verrechnungspreisen und das Country-by-Country Reporting – Die neuen Anforderungen der OECD und der EU -, Der Betrieb, 972-982.
27. Basel Committee on Banking Supervision (2010). "Basel III: A global regulatory framework for more resilient banks and banking systems", Bank for International Settlements.
28. BBC (2013). David Cameron calls for action on tax avoidance. Retrieved June 6, 2016 from: www.bbc.com/news/business-21176992
29. Biles, J. J. (2009). Informal work in Latin America: Competing perspectives and recent debates. *Geography Compass*, *3*(1), 214-236.
30. Bird, R. & Davis-Nozemack, K. (2018). Tax avoidance as a sustainability problem. *Journal of Business Ethics*, *151*(4), 1009-1025.
31. Blank, J. D. (2016). The timing of tax transparency. *S. Cal. L. Rev.*, *90*, 449.
32. Bouvatier, V., Capelle-Blancard, G. & Delatte, A.L. (2017). Banks in tax havens: First evidence based on country-by-country reporting (August 2017). *CEPR Discussion Paper No.* DP12222, Retrieved May 15, 2018 from: https://ssrn.com/abstract=3023206

33. Bracking, S. (2012). How do investors value environmental harm/care? Private equity funds, development finance institutions and the partial financialization of nature-based industries. *Development and Change*, *43*(1), 271-293.
34. Bradley, M., Jarrell, G. A. & Kim, E. H. (1984). On the existence of an optimal capital structure: Theory and evidence. *The Journal of Finance*, *39*(3), 857-878.
35. Brink, W. D., & Porcano, T. M. (2016). The impact of culture and economic structure on tax morale and tax evasion: A country-level analysis using SEM. In *Advances in taxation*. Emerald Group Publishing Limited.
36. Brooks, C., Godfrey, C., Hillenbrand, C. & Money, K. (2016). Do investors care about corporate taxes? *Journal of Corporate Finance*, *38*, 218-248.
37. Brown, J. L. & Drake, K. D. (2013). Network ties in low-tax firms. *The Accounting Review, Forthcoming*.
38. Brown, J. L. & Drake, K. D. (2014). Network ties among low-tax firms. *The Accounting Review*, *89*(2), 483-510.
39. Brown, J. L., Drake, K. & Wellman, L. (2015). The benefits of a relational approach to corporate political activity: Evidence from political contributions to tax policymakers. *The Journal of the American Taxation Association*, *37*(1), 69-102.
40. Brown, R. J., Jorgensen, B. N. & Pope, P. F. (2019). The interplay between mandatory country-by-country reporting, geographic segment reporting, and tax havens: Evidence from the European Union. *Journal of Accounting and Public Policy*, *38*(2), 106-129.
41. Bushman, R. M. (2014). Thoughts on financial accounting and the banking industry. *Journal of Accounting and Economics*, *58*(2-3), 384-395.
42. Cabezas, M. (2015). Giving Credit Where it is Due: Rethinking the Corporate Tax Paradigm. *Va. Tax Rev.*, *35*, 60.
43. Cai, H. & Liu, Q. (2009). Competition and corporate tax avoidance: Evidence from Chinese industrial firms. *The Economic Journal*, *119*(537), 764-795.
44. Capasso, S., Cicatiello, L., De Simone, E., Gaeta, G. L., & Mourão, P. R. (2021). Fiscal transparency and tax ethics: does better information lead to greater compliance? *Journal of Policy Modeling*, *43*(5), 1031-1050.
45. Celikay, F. (2020). Dimensions of tax burden: a review on OECD countries. *Journal of Economics, Finance and Administrative Science*. Retrieved March 12, 2020 from: https://www.emerald.com/insight/content/doi/10.1108/JEFAS-12-2018-0138/full/html
46. Cen, L., Maydew, E. L., Zhang, L. & Zuo, L. (2017). Customer supplier relationships and corporate tax avoidance. *Journal of Financial Economics*, *123*(2), 377–394.
47. Chatzivgeri, E., Chew, L., Crawford, L., Gordon, M. & Haslam, J. (2017). Accounting Law in Practice: Compliance, Consistency and Substance Focusing on the UK's Implementation of EU Extractive Industry Country by Country

Reporting of Government Payments to Governments. In *40th Annual Congress of the European Accounting Association*.
48. Chen, S., Chen, X., Cheng, Q. & Shevlin, T. (2010). Are family firms more tax aggressive than non-family firms? *Journal of Financial Economics*, *95*(1), 41–61.
49. Cheng, C. S. A., Huang, H. H., Yinghua, L. & Stanfield, J. (2012). The effect of hedge fund activism on corporate tax avoidance. *The Accounting Review*, *87*(5), 1493–1526.
50. Chernykh, L. & Mityakov, S. (2017). Offshore schemes and tax evasion: The role of banks. *Journal of Financial Economics*, *126*(3), 516-542.
51. Chi, S., Huang, S. X. & Sanchez, J. M. (2017). CEO inside debt incentives and corporate tax sheltering. *Journal of Accounting Research*, *55*(4), 837-876.
52. Chyz, J. (2013). Personally Tax Aggressive Executives and Corporate Tax Sheltering. *Journal of Accounting and Economics*. Retrived May 17, 2018 from: https://ssrn.com/abstract=1985558
53. Chyz, J. A., Leung, W. S. C., Li, O. Z. & Rui, O. M. (2013). Labor unions and tax aggressiveness. *Journal of Financial Economics*, *108*(3), 675-698.
54. Cobham, A. & Janský, P. (2018). Global distribution of revenue loss from corporate tax avoidance: re‐estimation and country results. *Journal of International Development*, *30*(2), 206-232.
55. Cockfield, A.J. & MacArthur, C.D. (2015). Country-by-Country Reporting and Commercial Confidentiality. *Canadian Tax Journal*, 627-660.
56. Comprix, J., Graham, R. C. & Moore, J. A. (2011). Empirical evidence on the impact of book-tax differences on divergence of opinion among investors. *Journal of the American Taxation Association*, *33*(1), 51-78.
57. Crawford, L. (2019). Exploring the emancipatory dimensions of globalisation: The struggle over IFRS8 and country-by-country reporting. *Critical Perspectives on Accounting*, *63*.
58. CRD IV (2011). CRD IV – Impact Assessment of the Different Measures within the Capital Requirements Directive IV, European Parliament. Retrieved March 25, 2018 from: https://www.europarl.europa.eu/RegData/etudes/etudes/join/2011/464423/IPOL-ECON_ET(2011)464423_EN.pdf
59. Crocker, K. J. & Slemrod, J. (2005). Corporate tax evasion with agency costs. *Journal of Public Economics*, *89*(9-10), 1593-1610.
60. Cummings, R. G., Martinez-Vazquez, J., McKee, M. & Torgler, B. (2009). Tax morale affects tax compliance: Evidence from surveys and an artefactual field experiment. *Journal of Economic Behaviour & Organization*, *70*(3), 447-457.
61. De Mooij, R. A. & Heckemeyer, M. J. (2013). Taxation and Corporate Debt: Are Banks any Different? (No. 2013/221). International Monetary Fund.
62. De Waegenaere, A., Sansing, R. & Wielhouwer, J. L. (2015). Financial accounting effects of tax aggressiveness: Contracting and measurement. *Contemporary Accounting Research*, *32*(1), 223-242.

63. Demirgüç-Kunt, A. & Huizinga, H. (1999). Determinants of commercial bank interest margins and profitability: some international evidence. *The World Bank Economic Review*, *13*(2), 379-408.
64. Demirgüç-Kunt, A. & Huizinga, H. (2001). The taxation of domestic and foreign banking. *Journal of Public Economics*, *79*(3), 429-453.
65. Desai, M. A. & Dharmapala, D. (2006). Corporate tax avoidance and high-powered incentives. *Journal of financial Economics*, *79*(1), 145-179.
66. Desai, M. A. & Dharmapala, D. (2009). Corporate tax avoidance and firm value. *The review of Economics and Statistics*, *91*(3), 537-546.
67. Desai, M. A., Foley, C. F. & Hines, J. R. (2004). A multinational perspective on capital structure choice and internal capital markets. *The Journal of finance*, *59*(6), 2451-2487.
68. Doerrenberg, P., & Peichl, A. (2013). Progressive taxation and tax morale. *Public Choice*, *155*(3), 293-316.
69. Donohoe, M. P. & Knechel, R. W. (2014). Does corporate tax aggressiveness influence audit pricing? *Contemporary Accounting Research*, *31*(1), 284-308.
70. Donohoe, M. P., McGill, G. A. & Outslay, E. (2014). Risky business: The prosopography of corporate tax planning. *National Tax Journal*, *67*(4), 851-874.
71. Dowling, G. R. (2014). The curious case of corporate tax avoidance: Is it socially irresponsible? *Journal of Business Ethics*, *124*(1), 173-184.
72. Drucker, J. (2006). Minding the gap: IRS looks closer to profit disparity. *Wall Street Journal (November 27) C*, *1*.
73. Duan, T., Ding, R., Hou, W. & Zhang, J. Z. (2018). The burden of attention: CEO publicity and tax avoidance. *Journal of Business Research*, *87*(0), 90–101.
74. Dunbar, A., Higgins, D., Phillips, J. & Plesko, G. (2010). What do measures of tax aggressiveness measure? In *Proceedings of the National Tax Association Annual Conference on Taxation*, *103*, 18-26.
75. Dutt, V. K., Ludwig, C. A., Nicolay, K., Vay, H. & Voget, J. (2019). Increasing tax transparency: Investor reactions to the country-by-country reporting requirement for EU financial institutions. *International Tax and Public Finance*, *26*(6), 1259-1290.
76. Dyreng, S. D. & Lindsey, B. P. (2009). Using financial accounting data to examine the effect of foreign operations located in tax havens and other countries on U.S. Multinational firms' tax rates. *Journal of Accounting Research*, *47*(5), 1283–1316.
77. Dyreng, S. D. & Lindsey, B. P. (2009). Using financial accounting data to examine the effect of foreign operations located in tax havens and other countries on U.S. multinational firms' tax rates. *Journal of Accounting Research*, *47*(5), 1283–1316.
78. Dyreng, S. D., Hanlon, M. & Maydew, E. L. (2010). The effects of executives on corporate tax avoidance. *The Accounting Review*, *85*(4), 1163-1189.

79. Dyreng, S. D., Hoopes, J. L. & Wilde, J. H. (2016). Public pressure and corporate tax behaviour. *Journal of Accounting Research*, *54*(1), 147–186.
80. Dyreng, S. D., Lindsey, B. P. & Thornock, J. R. (2013). Exploring the role Delaware plays as a domestic tax haven. *Journal of Financial Economics*, *108*(3), 751-772.
81. Dyreng, S., Hanlon, M. & Maydew, E. (2008). Long-run corporate tax avoidance. *The Accounting Review*, *83*(1), 61–82.
82. Edwards, A., Schwab, C. & Shevlin, T. (2013). Financial constraints and the incentive for tax planning. Paper presented at the 2013 American Taxation Association midyear meeting: New faculty/doctoral student session.
83. Edwards, A., Schwab, C. & Shevlin, T. (2016). Financial constraints and cash tax savings. *The Accounting Review*, *91*(3), 859-881.
84. EITI (2017). Progress report. Ending company anonymity. The key to fighting corruption. Retrieved July 15, 2018 from: https://eiti.org/files/documents/eiti_progress_report_2017.pdf
85. Erickson, M., Hanlon, M. & Maydew, E. L. (2004). How much will firms pay for earnings that do not exist? Evidence of taxes paid on allegedly fraudulent earnings. *The Accounting Review*, *79*(2), 387-408.
86. European Commission (2013a). 2013/36/EU (CRD IV)
87. European Commission (2016). Introducing public country-by-country reporting for multinational enterprises: Questions & Answers. Retrieved June 17, 2022 from: https://ec.europa.eu/commission/presscorner/detail/fr/MEMO_16_1351
88. European Commission (2017). Aggressive tax planning indicators. Final Report. Taxatation papers. Retrieved February 15, 2021 from: https://ec.europa.eu/taxation_customs/system/files/2018-03/taxation_papers_71_atp.pdf
89. European Council (2022).Taxation: Council reviews list of non-cooperative countries for tax purposes. Retrieved April 12, 2022 from: https://www.consilium.europa.eu/en/press/press-releases/2022/02/24/taxation-council-reviews-list-of-non-cooperative-countries-for-tax-purposes/
90. Evers, M., Meier, I. & Spengel, C. (2014). Transparency in financial reporting: Is country-by-country reporting suitable to combat international profit shifting? *ZEW-Centre for European Economic Research Discussion Paper*, 14-015.
91. EY (2013). Tax transparency seizing the initiative. Retrieved August 4, 2016 from: http://www.ey.com/Publication/vwLUAssets/Tax_Transparency_-_Seizing_the_initiative/$ FILE/EY_Tax_Transparency.pdf
92. Faulkender, M. & Wang, R. (2006). Corporate financial policy and the value of cash. *The Journal of Finance*, *61*(4), 1957-1990.
93. Fehling, D. (2015). Das BEPS-Projekt auf der Zielgeraden – was bedeutet dies für Deutschland? *Finanz-Rundschau Ertragsteuerrecht*, 817-823.

94. Ferrer-i-Carbonell, A. & Gërxhani, K. (2016). Tax evasion and well-being: A study of the social and institutional context in Central and Eastern Europe. *European Journal of Political Economy*, *45*, 149-159.
95. Filer, R. K., Hanousek, J., Lichard, T. & Torosyan, K. (2019). 'Flattening'tax evasion? Evidence from the post-communist natural experiment. *Economics of Transition and Institutional Change*, *27*(1), 223-246.
96. Fisher, J. M. (2014). Fairer shores: Tax havens, tax avoidance, and corporate social responsibility. *BUL Rev.*, *94*, 337.
97. Foster Back, P. (2013). Avoiding tax may be legal, but can it ever be ethical? Retrieved May 18, 2020 from: http://www.theguardian.com/sustainable-business/avoiding-tax-legal-but-ever-ethical
98. Francis, B. B., Hasan, I., Wu, Q. & Yan, M. (2014). Are female CFOs less tax aggressive? Evidence from tax aggressiveness. *The Journal of the American Taxation Association*, *36*(2), 171-202.
99. Francis, B. B., Ren, N. & Wu, Q. (2017). Banking deregulation and corporate tax avoidance. *China Journal of Accounting Research*, *10*(2), 87-104.
100. Frank, M. M., Lynch, L. J. & Rego, S. O. (2009). Tax reporting aggressiveness and its relation to aggressive financial reporting. *The Accounting Review*, *84*(2), 467-496.
101. Freedman, J. (2003). Tax and corporate responsibility. *Tax Journal*, *695*(2), 1–4.
102. Freedman, J. (2004). Defining taxpayer-responsibility: In support of a general anti-avoidance principle. *British Tax Review*, *4*, 332–357.
103. Frey, B. S., & Torgler, B. (2007). Tax morale and conditional cooperation. *Journal of comparative economics*, *35*(1), 136-159.
104. Friedman, E., Johnson, S., Kaufmann, D. & Zoido-Lobaton, P. (2000). Dodging the grabbing hand: the determinants of unofficial activity in 69 countries. *Journal of public economics*, *76*(3), 459-493.
105. Frischmann, P., Shevlin, T. & Wilson, R. (2008). Economic consequences of increasing the conformity in accounting for uncertain tax benefits. *Journal of Accounting and Economics*, *46* (2-3), 261-278.
106. Fuest, C., Hugger, F., & Neumeier, F. (2022). Corporate profit shifting and the role of tax havens: Evidence from German country-by-country reporting data. *Journal of Economic Behaviour & Organization*, *194*, 454-477.
107. Gallemore, J. & Labro, E. (2015). The importance of the internal information environment for tax avoidance. *Journal of Accounting and Economics*, *60*(1), 149–167.
108. Gallemore, J., Mayberry, M. & Wilde, J. (2017). Corporate taxation and bank outcomes: Evidence from US state taxes. University of Chicago, Florida and Lowa Graduate School of Business.
109. Gallemore, J., Maydew, E. L. & Thornock, J. (2012). The reputational costs of tax avoidance and the under-sheltering puzzle. University of North Carolina working paper.

110. Gallemore, J., Maydew, E. L. & Thornock, J. R. (2014). The reputational costs of tax avoidance. *Contemporary Accounting Research*, *31*(4), 1103-1133.
111. Garbarino, C. (2011). Aggressive tax strategies and corporate tax governance: An institutional approach.
112. Gilson, M., Wells, J., Feinberg, A. & Newman, A. (2014). The evolving procurement model. International Tax Review, January 23. Retrieved March 25, 2018 from: https://www.internationaltaxreview.com/article/b1f9k1mrvgjkng/the-evolving-procurement-model
113. Graham, J. R. & Tucker, A. L. (2006). Tax shelters and corporate debt policy. *Journal of Financial Economics*, *81*(3), 563-594.
114. Graham, J. R., Hanlon, M., Shevlin, T. & Shroff, N. (2014). Incentives for tax planning and avoidance: Evidence from the field. *The Accounting Review*, *89*(3), 991-1023.
115. Graham, J. R., Lemmon, M. L. & Schallheim, J. S. (1998). Debt, leases, taxes, and the endogeneity of corporate tax status. *The Journal of Finance*, *53*(1), 131-162.
116. Gravelle, J. G. (2009). Tax havens: International tax avoidance and evasion. *National Tax Journal*, *62*(4), 727-753.
117. Gribnau, H. (2015). Corporate social responsibility and tax planning: Not by rules alone. *Social & Legal Studies*, *24*(2), 225-250.
118. Gupta, S. & Newberry, K. (1997). Determinants of the variability in corporate effective tax rates: Evidence from longitudinal study. *Journal of Accounting and Public Policy*, *16*, 1-34.
119. Guenther, D. A. (2014). Measuring corporate tax avoidance: Effective tax rates and book-tax differences. *Available at SSRN 2478952*.
120. Hakim, A. T. (2014). *Modelling the impact of tax structure on economic indicators* (Doctoral dissertation, University Technology MARA).
121. Hallerberg, M. (2012). Explaining European Patterns of Taxation. Retrieved March 20, 2021 from: https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.1022.4137&rep=rep1&type=pdf
122. Hanlon, M. & Heitzman, S. (2010). A review of tax research. *Journal of Accounting and Economics*, *50*, 127-178.
123. Hanlon, M. & Slemrod, J. (2009). What does tax aggressiveness signal? Evidence from stock price reactions to news about tax shelter involvement. *Journal of Public economics*, *93*(1-2), 126-141.
124. Hanlon, M. (2018). “Country-by-Country Reporting and the International Allocation of Taxing Rights.” *Bulletin for International Taxation*, 72(4/5), 209–2017.
125. Hanlon, M., Kelley Laplante, S. & Shevlin, T. (2005). Evidence for the possible information loss of conforming book income and taxable income. *The Journal of Law and Economics*, *48*(2), 407-442.

126. Hasan, I., Hoi, C.K.S., Wu, Q. & Zhang, H. (2014). Beauty is in the eye of the beholder: the effect of corporate tax avoidance on the cost of bank loans. *Journal of Financial Economics*, *113*(1), 109–130.
127. Hasan, I., Liu, L. & Zhang, G. (2016). The determinants of global bank credit-default-swap spreads. *Journal of Financial Services Research*, *50*(3), 275-309.
128. Hasseldine, J. & Morris, G. (2013). Corporate social responsibility and tax avoidance: A comment and reflection. *Accounting Forum*, *37*(1), 1-14.
129. Heckemeyer, J. H. & Overesch, M. (2017). Multinationals' profit response to tax differentials: Effect size and shifting channels. *Canadian Journal of Economics/Revue canadienne d'économique*, *50*(4), 965-994.
130. Heltzer, W., Mindak, M. P. & Shelton, S. W. (2012). The relation between aggressive financial reporting and aggressive tax reporting: Evidence from ex-Arthur Andersen clients. *Research in Accounting Regulation*, *24*(2), 96-104.
131. Hemmelgarn, T. & Teichmann, D. (2014). Tax reforms and the capital structure of banks. *International Tax and Public Finance*, *21*(4), 645-693.
132. Herbert, T., Olligs, P. & Overesch, M. (2016). Public disclosure of foreign subsidiaries and international tax avoidance. Retrieved January 22, 2022 from: https://kups.ub.uni-koeln.de/7124/1/Dissertation_Pia_Olligs.pdf#page=23
133. Higgins, D., Omer, T. C. & Phillips, J. D. (2015). The influence of a firm's business strategy on its tax aggressiveness. *Contemporary Accounting Research*, *32*(2), 674–702.
134. Hill, M. D., Kubick, T. R., Lockhart, G. B. & Wan, H. (2013). The effectiveness and valuation of political tax minimization. *Journal of Banking & Finance*, *37*(8), 2836-2849.
135. Hoi, C. K., Wu, Q. & Zhang, H. (2013). Is corporate social responsibility (CSR) associated with tax avoidance? Evidence from irresponsible CSR activities. *The Accounting Review*, *88*(6), 2025-2059.
136. Holme, L. & Watts, P. (2006). Human rights and corporate social responsibility. *World Business Council for Sustainable Development, Geneva*.
137. Hoopes, J. L., Mescall, D. & Pittman, J. A. (2012). Do IRS audits deter corporate tax avoidance? *The Accounting Review*, *87*(5), 1603-1639.
138. Hoopes, J. L., Robinson, L. & Slemrod, J. (2018). Public tax-return disclosure. *Journal of Accounting and Economics*, *66*(1), 142-162.
139. Horodnic, I. A. (2018). Tax morale and institutional theory: a systematic review. *International Journal of Sociology and Social Policy*.
140. Huang, C. C., Marr, C. & Friedman, J. (2013). The Fiscal and Economic Risks of Territorial Taxation. *Center on Budget and policy priorities*. Retrieved July 15, 2020 from: http://faculty.cbpp.uaa.alaska.edu/afgjp/PADM628%20Spring%202013/Fiscal%20and%20Economic%20Risks%20of%20Territorial%20Taxation.pdf

141. Huang, W., Ying, T. & Shen, Y. (2018). Executive cash compensation and tax aggressiveness of Chinese firms. *Review of Quantitative Finance and Accounting*, *51*(4), 1151-1180.
142. Huseynov, F. & Klamm, B. (2012). Tax Avoidance, tax management and corporate social responsibility, *Journal of Corporate Finance, 18*(4), 804-827.
143. Institute of Business Ethics (2013). Tax avoidance as an ethical issue for business. *Business Ethics Briefing, 31*, 1–4.
144. Jaafar, A. & Thornton, J. (2015). Tax havens and effective tax rates: An analysis of private versus public European firms. *The International Journal of Accounting*, *50*(4), 435-457.
145. Jaafar, A. & Thornton, J. (2015). Tax havens and effective tax rates: An analysis of private versus public European firms. *The International Journal of Accounting*, *50*(4), 435-457.
146. James, C. (1987). Some evidence on the uniqueness of bank loans. *Journal of financial economics*, *19*(2), 217-235.
147. Jelínková, E. (2016). Estimating the Misalignment between the Locations of Profits and Economic Activities of EU's Banks.
148. Jenkins, R. & Newell, P. (2013). CSR, tax and development. *Third World Quarterly*, *34*(3), 378-396.
149. Jensen, M. C. & Meckling, W. H. (1976). Theory of the firm: Managerial behaviour, agency costs and ownership structure. *Journal of financial economics*, *3*(4), 305-360.
150. Jensen, M. C. & Murphy, K. J. (1990). Performance pay and top-management incentives. *Journal of political economy*, *98*(2), 225-264.
151. Jin, J. Y., Kanagaretnam, K. & Lobo, G. J. (2011). Ability of accounting and audit quality variables to predict bank failure during the financial crisis. *Journal of Banking & Finance*, *35*(11), 2811-2819.
152. Johannesen, N. & Larsen, D. T. (2016). The power of financial transparency: An event study of country-by-country reporting standards. *Economics Letters*, *145*, 120-122.
153. Johansson, A., Skeie, O. B. & Sorbe, S. (2016). Anti-avoidance rules against international tax planning: A classification. *OECD working paper*.
154. Jones, C., Temouri, Y. & Cobham, A. (2018). Tax haven networks and the role of the Big 4 accountancy firms. *Journal of World Business*, *53*(2), 177-193.
155. Joshi, P., Outslay, E., Persson, A., Shevlin, T., & Venkat, A. (2020). Does public country-by-country reporting deter tax avoidance and income shifting? Evidence from the European banking industry. *Contemporary Accounting Research*, *37*(4), 2357-2397.
156. Kanagaretnam, K., Lee, J., Lim, C. Y., & Lobo, G. J. (2014). Societal Trust and Corporate Tax Avoidance. *Journal of International Accounting Research Conference*, 1-56.

157. Kanagaretnam, K., Lee, J., Yeow Lim, C. & Lobo, G. (2018). Societal Trust and Corporate Tax Avoidance. *Review of Accounting Studies*, *23*(4), 1588-1628.
158. Kanagaretnam, K., Lee, J., Yeow Lim, C. & Lobo, J. G. (2016). Relation between Auditor Quality and Tax Aggressiveness: Implications of Cross-Country Institutional Differences. *AUDITING: A Journal of Practice & Theory*, *35*(4), 105-135.
159. Katz, S., Khan, U. & Schmidt, A. (2013). Tax Avoidance and Future Profitability. Working Paper, Columbia Business School, North Carolina State University.
160. Keen, M. M. & de Mooij, R. A. (2012). Debt, taxes, and banks. *International Monetary Fund*.
161. Keung, C., Qiang, H. W. & Hao, Z. (2013). Is corporate social responsibility (CSR) associated with tax avoidance? Evidence from irresponsible CSR activities. *The Accounting Review*, *88*(6), 2025–2059.
162. Khurana, I. K. & Moser, W. J. (2013). Institutional shareholders' investment horizons and tax avoidance. *The Journal of the American Taxation Association*, *35*(1), 111-134.
163. Kim, J. B., Li, Y. & Zhang, L. (2011). CFOs versus CEOs: Equity incentives and crashes. *Journal of financial economics*, *101*(3), 713-730.
164. Kim, Y., Park, M. S. & Wier, B. (2012). Is earnings quality associated with corporate social responsibility? *The Accounting Review*, *87*(3), 761-796.
165. Knobel, A. & Cobham, A. (2016). Country-by-Country reporting: How restricted access exacerbates global inequalities in taxing rights. Retrieved May 10, 2021 from: https://financialtransparency.org/wp-content/uploads/2016/12/TNJ_AccesstoCBCRreport.pdf
166. Knuutinen, R. (2014). Corporate social responsibility, taxation and aggressive tax planning. *Nordic Tax Journal*, *1*(1), 36-75.
167. Kornai, J. (1990). The affinity between ownership forms and coordination mechanisms: The common experience of reform in socialist countries. *Journal of Economic Perspectives*, *4*(3), 131-147.
168. Kubick, T. R. & Lockhart, G. B. (2017). Corporate tax aggressiveness and the maturity structure of debt. *Advances in Accounting*, *36*, 50-57.
169. Kubick, T. R., Lynch, D. P., Mayberry, M. A. & Omer, T. C. (2015). Product market power and tax avoidance: Market leaders, mimicking strategies, and stock returns. *The Accounting Review*, *90*(2), 675-702.
170. KPMG (2022). Global Transfer Pricing Review: Transfer pricing documentation summaries by jurisdiction. Retrieved April 12, 2022 from: https://tax.kpmg.us/content/dam/tax/en/pdfs/2022/kpmg-global-transfer-pricing-review.pdf
171. Koppel, P. & Stauner, S. (2020). Mounting Pressure for Public Disclosure of Country-by-Country Reporting. Retrieved June 22, 2022 from:

https://www.kroll.com/en/insights/publications/transfer-pricing/transfer-pricing-times-first-quarter-2020/public-disclosure-country-by-country-reports

172. Laguir, I., Staglianò, R. & Elbaz, J. (2015). Does corporate social responsibility affect corporate tax aggressiveness? *Journal of Cleaner Production*, *107*, 662-675.
173. Landolf, U. (2006). Tax and corporate responsibility. *International Tax Review, 29*, 6–9.
174. Lanis, R. & Richardson, G. (2012). Corporate social responsibility and tax aggressiveness: An empirical analysis. *Journal of Accounting and Public Policy*, *31*(1), 86-108.
175. Lanis, R. & Richardson, G. (2015). Is corporate social responsibility performance associated with tax avoidance? *Journal of Business Ethics*, *127*(2), 439-457.
176. Laura-Liana, S. & Carmen, M. A. (2009). The flat tax effects–theoretical and empirical evidence in Western and Eastern European countries. *Annals of Faculty of Economics*, *3*(1), 343-348.
177. Law, K. K. & Mills, L. F. (2015). Taxes and financial constraints: Evidence from linguistic cues. *Journal of Accounting Research*, *53*(4), 777-819.
178. Lenz, H. (2020). Aggressive tax avoidance by managers of multinational companies as a violation of their moral duty to obey the law: A Kantian rationale. *Journal of Business Ethics*, *165*(4), 681-697.
179. Lev, B. & Nissim, D. (2004). Taxable income, future earnings, and equity values. *The Accounting Review*, *79*(4), 1039-1074.
180. Lietz, G. M. (2013). Tax avoidance vs. tax aggressiveness: A unifying conceptual framework. *Tax Aggressiveness: A Unifying Conceptual Framework.*
181. Lipton, D., Sachs, J., Fischer, S., & Kornai, J. (1990). Creating a market economy in Eastern Europe: The case of Poland. *Brookings papers on economic activity*, *1990*(1), 75-147.
182. Lisowsky, P. (2010). Seeking Shelter: Empirically Modeling Tax Shelters Using Financial Statement Information, *The Accounting Review*, *85*(5), 1693-1720.
183. Lisowsky, P., Robinson, L. & Schmidt, A. (2013). Do Publicly Disclosed Tax Reserves Tell Us About Privately Disclosed Tax Shelter Activity? *Journal of Accounting Research*, *51*(3), 583-629.
184. Liu, Q. & Tian, G. (2012). Controlling shareholder, expropriations and firm's leverage decision: Evidence from Chinese Non-tradable share reform. *Journal of Corporate finance*, *18*(4), 782-803.
185. Longhorn, M., Rahim, M. & Sadiq, K. (2016). Country-by-country reporting: An assessment of its objective and scope. *eJTR*, *14*, 4.
186. Luttmer, E. F. & Singhal, M. (2014). Tax morale. *Journal of economic perspectives*, *28*(4), 149-68.
187. Malik, S., Mihm, B. & Timme, F. (2018). An experimental analysis of tax avoidance polices. *International Tax and Public Finance*, *25*, 200-239.

188. Manganaris, P., Beccalli, E. & Dimitropoulos, P. (2017). Bank transparency and the crisis. *The British Accounting Review*, *49*(2), 121-137.
189. Manzon, G. & Plesko, G. (2002). The relation between financial and tax reporting measures of income. *Tax Law Review*, *55*(2), 175-214.
190. Markle, K. S. & Shackelford, D. A. (2012). Cross-country comparisons of corporate income taxes. *National Tax Journal*, *65*(3), 493–527.
191. Matheson, M. T., Perry, V. J. & Veung, M. C. (2013). *Territorial vs. worldwide corporate taxation: implications for developing countries*. International Monetary Fund.
192. Mayberry, M. A., McGuire, S. T. & Omer, T. C. (2015). Smoothness and the value relevance of taxable income. *The Journal of the American Taxation Association*, *37*(2), 141-167.
193. McGuire, S. T., Omer, T. C. & Wilde, J. H. (2014). Investment opportunity sets, operating uncertainty, and capital market pressure: Determinants of investments in tax shelter activities? *Journal of the American Taxation Association*, *36*(1), 1–26.
194. McGuire, S. T., Omer, T.C. & Wang, D. (2012). Tax Avoidance: Does Tax-Specific Industry Expertise Make a Difference? *The Accounting Review*, *87*(3), 975-1003.
195. McGuire, S. T., Wang, D. & Wilson, R. J. (2014). Dual class ownership and tax avoidance. *The Accounting Review*, *89*(4), 1487-1516.
196. Merz, J. & Overesch, M. (2016). Profit shifting and tax response of multinational banks. *Journal of Banking & Finance*, *68*(C), 57-68.
197. Mills, L. (1998). Book-tax differences and internal revenue service adjustments. *Journal of Accounting Research*, *36*(2), 343–356.
198. Mills, L. F., Newberry, K. J. & Trautman, W. B. (2002). Trends in book-tax income and balance sheet differences. Retrieved 10 July, 2021 from: https://openresearch-repository.anu.edu.au/bitstream/1885/42022/2/workshop.mills.pdf
199. Mills, L., Erickson, M. & Maydew, E. (1998). Investments in tax planning. *Journal of the American Taxation Association*, *20*(1), 1–20.
200. Minnick, K. & Noga, T. (2010). Do corporate governance characteristics influence tax management? *Journal of corporate finance*, *16*(5), 703-718.
201. Müller, R., Spengel, C. & Vay, H. (2020). On the determinants and effects of corporate tax transparency: Review of an emerging literature. ZEW-Centre for European Economic Research Discussion Paper, (20-063).
202. Murphy, K. (2004). Aggressive tax planning: Differentiating those playing the game from those who don’t. *Journal of Economic Psychology*, *25*(3), 307-329.
203. Murphy, R. (2009). Country-by-Country Reporting – Holding multinational corporations to account wherever they are, Task Force on Financial Integrity and Economic Development.

204. Murphy, R. (2012). Closing the European Tax Gap – A Report for Group of the Progressive Alliance of Socialists & Democrats in the European Parliament, Tax Research LLP.
205. Murphy, R. (2012). The Benefits of Country-by-Country Reporting. *ACAS Bulletin*, *87*, 42-47.
206. Murphy, R. (2016). Country-by-country reporting. *Global tax fairness*, *96*, 96-112.
207. Murphy, R. (2015). "European Banks' Country-by-Country Reporting." Retrieved June 25, 2018 from: http://www.taxresearch.org.uk/Documents/CRDivCBCR2015.pdf
208. Neck, R., Wächter, J. U. & Schneider, F. (2012). Tax avoidance versus tax evasion: on some determinants of the shadow economy. *International Tax and Public Finance*, *19*, 104-117.
209. Nelling, E. & Webb, E. (2009). Corporate social responsibility and financial performance: the "virtuous circle" revisited. *Review of Quantitative finance and accounting*, *32*(2), 197-209.
210. Nuta, A. C. (2008). The incidence of public spending on economic growth. *Euro Economica*, *20*, 65 – 68.
211. Oats, L. & Tuck, P. (2019). Corporate tax avoidance: is tax transparency the solution? *Accounting and Business Research*, *49*(5), 565-583.
212. OECD (2008). Study into the Role of Tax Intermediaries. Retrieved January 10, 2021 from: https://www.oecd.org/tax/administration/studyintotheroleoftaxintermediaries.htm
213. OECD (2010). Publishing, & Organisation for Economic Co-operation and Development. *Addressing tax risks involving bank losses*. Organization for Economic Co-operation and Development.
214. OECD (2013a). Action plan on Base Erosion and Profit Shifting, *OECD Publishing*.
215. OECD (2015a). Action 13: Guidance on the Implementation of Transfer Pricing Documentation and Country-by-Country Reporting, *OECD Publishing*.
216. OECD (2015b). Action 13: Country-by-Country Implementation Package, *OECD Publishing*.
217. OECD (2017). OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations 2017, OECD Publishing.
218. OECD (2019). Tax Morale What Drives People And Businesses To Pay Tax? Organization For Economic Co-Operation A.
219. OECD/CAF/UN ECLAC (2018), Latin American Economic Outlook 2018: Rethinking Institutions for Development, OECD Publishing. Retrieved 14 June, 2019 from: https://dx.doi.org/10.1787/leo-2018-en
220. OECD (2021). Address the Tax Challenges Arising from the Digitalisation of the Economy. Retrieved June 25, 2022 from:

https://www.oecd.org/tax/beps/brochure-two-pillar-solution-to-address-the-tax-challenges-arising-from-the-digitalisation-of-the-economy-october-2021.pdf

221. OECD's Glossary of Tax Terms. Retrieved December 25, 2021 from: https://www.oecd.org/ctp/glossaryoftaxterms.tm
222. Overesch, M. & Wolff, H. (2018). Financial transparency to the rescue: Effects of country-by-country reporting in the EU banking sector on tax avoidance. Working Paper, University of Cologne.
223. Payne, D. M. & Raiborn, C.A. (2018). Aggressive Tax Avoidance: A Conundrum for Stakeholders, Governments and Morality. *Journal of Business Ethics*, *147*, 469 – 487.
224. Phillips, J. D. (2003). Corporate tax-planning effectiveness: The role of compensation-based incentives. *The Accounting Review*, *78*(3), 847-874.
225. Pinkernell, R. (2014). Neue OECD-Grundsätze zur Verrechnungspreisdokumentation und Country-by-Country Reporting (Maßnahme 13 des BEPS-Aktionsplans), FinanzRundschau Ertragsteuerrecht, 964-971.
226. PWYP (2015b). Why Mandatory disclosure? Retrieved March 20, 2018 from: http://www.publishwhatyoupay.org/about/advocacy/mandatory-disclosures
227. PWYP (2016). Proud past, bright future PWYP activities report 2012-2015. PWYP: London.
228. Qian, M. & Yeung, B. Y. (2015). Bank financing and corporate governance. *Journal of Corporate Finance*, *32*, 258-270.
229. Rego, S. (2003). Tax avoidance activities of U.S. multinational corporations. *Contemporary Accounting Research*, *20*(4), 805–833.
230. Rego, S. O. & Wilson, R. (2012). Equity risk incentives and corporate tax aggressiveness. *Journal of Accounting Research*, *50*(3), 775-810.
231. Reibel, R. (2015). Tax Transparency – How To Make It Work? *European Taxation*, 209- 212.
232. Reiter, F., Langenmayr, D. & Holtmann, S. (2021). Avoiding taxes: banks' use of internal debt. *International tax and public finance*, *28*(3), 717-745.
233. Remeta, J., Perret, S., Jareš, M. & Brys, B. (2015). Moving Beyond the Flat Tax-Tax Policy Reform in the Slovak Republic.
234. Richardson, G., Lanis, R. & Leung, S. C. M. (2014). Corporate tax aggressiveness, outside directors, and debt policy: An empirical analysis. *Journal of Corporate Finance*, *25*, 107-121.
235. Robinson, J. R., Sikes, S. A. & Weaver, C. D. (2010). Performance measurement of corporate tax departments. *The Accounting Review*, *85*(3), 1035-1064.
236. Saavedra, P., Marcincin, A. & Valachy, J. (2007). Flat income tax reforms. *Cheryl Gray, Tracey Lane és Aristomene Varoudakis, Fiscal Policy and Economic Growth. Lessons for Eastern Europe and Central Asia. Washington (USA), World Bank.*

237. Schandlbauer, A. (2017). How do financial institutions react to a tax increase? *Journal of Financial Intermediation*, *30*, 86-106.
238. Schauer, F. (2011). Transparency in Three Dimensions, *U. ILL. L. REV.*, *1339*, 1348–50.
239. Schlie, I. & Malke, C. (2013). Country by Country Reporting im Hinblick auf Steuerzahlungen multinationaler Unternehmen – Aktuelle Entwicklungen und Diskussionsbedarf, Der Betrieb, 2467-2470.
240. Schneider, F., Buehn, A. & Montenegro, C. E. (2010). New estimates for the shadow economies all over the world. *International Economic Journal*, *24*(4), 443-461.
241. Scholes, M. S., Wilson, G. P. & Wolfson, M. A. (1990). Tax planning, regulatory capital planning and financial reporting strategy for commercial banks. *The Review of Financial Studies*, *3*(4), 625-650.
242. Scholes, M., Wolfson, M., Erickson, M., Maydew, E. & Shevlin, T. (2009). Taxes and Business Strategy: A Planning Approach, 4 Ed., Prentice-Hall Inc., Upper Saddle River, NJ.
243. Scholtens, B. & Kang, F. C. (2013). Corporate social responsibility and earnings management: Evidence from Asian economies. *Corporate Social Responsibility and Environmental Management*, *20*(2), 95-112.
244. Scholtens, B. (2008). A note on the interaction between corporate social responsibility and financial performance. *Ecological economics*, *68*(1-2), 46-55.
245. Seida, J. A. & Wempe, W. F. (2004). Effective tax rate changes and earnings stripping following corporate inversion. *National tax journal*, *57*(4), 805-828.
246. Shroff, N. (2017). Corporate investment and changes in GAAP. *Review of Accounting Studies*, *22*(1), 1-63.
247. Slemrod, J. & Yitzhaki, S. (2002). Tax avoidance, evasion, and administration. In *Handbook of public economics*, *3*, 1423-1470.
248. Solum, L. (2016). Legal Theory Lexicon 045: The Attitudinal Model & the New Institutionalism. *Legal Theory Blog*, *9*.
249. Sudrajad, O.Y. & Hübner, G. (2019). Empirical evidence on bank market power, business models, stability and performance in the emerging economies. *Eurasian Business Review* 9(2), 213–245.
250. Taylor, G., Richardson, G. & Lanis, R. (2015). Multinationality, tax havens, intangible assets, and transfer pricing aggressiveness: An empirical analysis. *Journal of International Accounting Research*, *14*(1), 25-57.
251. Thomsen, M. & Watrin, C. (2018). Tax avoidance over time: A comparison of European and US firms. *Journal of International Accounting, Auditing and Taxation*, *33*, 40-63.
252. Torgler, B. (2011). Tax morale and compliance: review of evidence and case studies for Europe. *World Bank Policy Research Working Paper*, (5922).
253. Tørsløv, T. R., Wier, L. S., & Zucman, G. (2018). *The missing profits of nations* (No. w24701). National Bureau of Economic Research.

254. U.S. Department of Treasury (1999). The Problem of Corporate Tax Shelters: Discussion, Analysis and Legislative Proposals, 1-165.
255. Watson, L. (2015). Corporate social responsibility, tax avoidance, and earnings performance. *The Journal of the American Taxation Association*, *37*(2), 1-21.
256. Whait, R. B., Christ, K. L., Ortas, E. & Burritt, R. L. (2018). What do we know about tax aggressiveness and corporate social responsibility? An integrative review. *Journal of cleaner production*, *204*, 542-552.
257. Wilde, J. H. & Wilson, R. J. (2018). Perspectives on corporate tax planning: Observations from the past decade. *The Journal of the American Taxation Association*, *40*(2), 63-81.
258. Williams, D. F. (2007). Developing the concept of tax governance. London: KPMG.
259. Wilson, R. J. (2009). An examination of corporate tax shelter participants. The Accounting Review, *84*(3), 969–999. World Economic Forum (2005). The global competitiveness report Years: 2005–2016.
260. Williams, C., & Martínez, Á. (2014). Explaining cross-national variations in tax morality in the European Union: an exploratory analysis. *Studies of Transition States and Societies*, *6*(1), 5-18.
261. Wojcik, D. (2012). Shining light on globalization: The political economy of country-by-country reporting. *Employment, Work and Finance working paper*, (12-07).
262. Xia, C., Cao, C. & Chan, K. C. (2017). Social trust environment and firm tax avoidance: Evidence from China. *The North American Journal of Economics and Finance*, *42*, 374-392.
263. Zalasinski, A. (2008). Some basic aspects of the concept of abuse in the tax case law of the European Court of Justice. *Intertax*, *36*, 156.
264. Zimmerman, J. L. (1983). Taxes and firm size. *Journal of accounting and economics*, *5*, 119-149.
265. Zucman, G. (2013). The missing wealth of nations: Are Europe and the US net debtors or net creditors? *The Quarterly journal of economics*, *128*(3), 1321-1364.
266. Zucman, G. (2014). Taxing across borders: Tracking personal wealth and corporate profits. *Journal of Economic Perspectives, 28*(4), 121–148.

APPENDICES

APPENDIX A: Definition of variables

Measures of tax aggressiveness		**Source**
ETR	Book effective tax rate, defined as the ratio of total tax expenses to pre-tax income.	Fitch Connect database
CASHETR	Cash effective tax rate, defined as the ratio of total cash tax paid on pre-tax income.	Fitch Connect database
BTD	Total book-tax differences, measured as pre-tax book income reduced by taxable income (current tax expense divided by statutory tax rate), and scaled by total assets in year t-1 (Manzon & Plesko, 2002; Frank, Lynch & Rego, 2009).	Fitch Connect database
Variables of interest		
CbCR_ legislation	An indicator variable that equals 0 for the time period before 2014 (period before the implementation of CbCR), and 1 for 2014 and later.	Own calculation
CbCR_ implementation	An indicator variable that equals 0 if CbC Report is not publicly available on the bank's website nor forms part of other available reports of the bank (full non-implementation of CbCR by bank i in period t), 1 if CbC Report is available on the bank's website, but the report does not contain all the necessary information (partial CbCR implementation by bank i in period t) and 2 if CbC Report is publicly available on the bank's website and created by following all of the instructions prescribed by the OECD and the EU (full CbCR implementation by bank i in period t).	Banks' reports and websites
$Multinational_{i,t}$	A dummy variable equal to 1 if a company has at least one subsidiary located outside the country of the parent company, and 0 otherwise.	Fitch Connect database
Country-level control variables		
STR	Statutory tax rate	KPMG's corporate tax rate table (2019)
WWTAX	An indicator variable that equals 1 if the EU country adopts a worldwide taxation approach and 0 if the EU country adopts a territorial taxation approach.	Matheson, Perry& Weung (2013)
GDP	Gross Domestic Product growth (annual %)	https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG
TAX_COMPLEXITY	An indicator variable that equals 1 if a country has more complex tax regimes than the sample annual average, and 0 otherwise. Data were collected from World Competitiveness Reports for the period 2009–2018. For each country, interviewees are required to select and	World Competitiveness Reports (2009–2018)

	rate the five most problematic issues related to doing business. The value of “Tax regulations” varies from 0.9 (Cyprus in 2016) to 21.8 (Poland in 2010).	
CFC_RULES	An indicator variable that equals 1 if a country has applied the CFC rules (Controlled Foreign Company Rules), and 0 otherwise.	Johansson, Skeie & Sorbe (2016)
REPORTING_ STRENGTH	An indicator variable that equals 1 if a country has stronger reporting and auditing standards than the sample annual average, and 0 otherwise. Data were collected from World Competitiveness Reports for the period 2009–2018. Respondents are required to answer the following question: What is the strength of the auditing and reporting standards in your country? (1 = very weak and 7 = very strong)	World Competitiveness Reports (2009–2018)
TREND	A time trend variable measured as the current fiscal year minus the first fiscal year in the sample.	Own calculation
Bank-level control variables		
SIZE	Natural logarithm of total assets	Fitch Connect database
PROA	Pre-tax return on assets	Fitch Connect database
LEVERAGE	Leverage, defined as long-term debt divided by total assets	Fitch Connect database
INTANG	Intangible assets (goodwill and other intangibles)	Fitch Connect database
CAPITAL_ADE QUACY	Capital adequacy ratio, measured as the sum of tier 1 capital and tier 2 capital divided by risk-weighted assets	Fitch Connect database
ASSETS_QUAL ITY	Assets quality, defined as loan-loss provisions divided by total loans	Fitch Connect database
LIQUIDITY	Bank’s liquidity, measured as liquid assets divided by total assets	Fitch Connect database
DEPOSITS	Deposits, measured as the ratio of a bank’s deposits to its total assets	Fitch Connect database

APPENDIX B: Corporate tax rates

Country	Corporate income tax rate (CITRATE)									
	2009	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Austria	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
Belgium	33.99	33.99	33.99	33.99	33.99	33.99	33.99	33.99	33.99	29.00
Bulgaria	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Croatia	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	18.00
Cyprus	10.00	10.00	10.00	10.00	12.50	12.50	12.50	12.50	12.50	12.50
Czech Republic	20.00	19.00	19.00	19.00	19.00	19.00	19.00	19.00	19.00	19.00
Denmark	25.00	25.00	25.00	25.00	25.00	24.50	22.00	22.00	22.00	22.00
Estonia	21.00	21.00	21.00	21.00	21.00	21.00	20.00	20.00	20.00	20.00
Finland	26.00	26.00	26.00	24.50	24.50	20.00	20.00	20.00	20.00	20.00
France	33.33	33.33	33.33	33.33	33.33	33.33	33.33	33.30	33.33	33.00
Germany	29.44	29.41	29.37	29.48	29.55	29.58	29.72	29.72	29.79	30.00
Greece	25.00	24.00	20.00	20.00	26.00	26.00	29.00	29.00	29.00	29.00
Hungary	16.00	19.00	19.00	19.00	19.00	19.00	19.00	19.00	9.00	9.00
Ireland	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50
Italy	31.40	31.40	31.40	31.40	31.40	31.40	31.40	31.40	24.00	24.00
Latvia	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	20.00
Lithuania	20.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
Luxembourg	28.59	28.59	28.80	28.80	29.22	29.22	29.22	29.22	27.08	26.01
Malta	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Netherlands	25.50	25.50	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
Poland	19.00	19.00	19.00	19.00	19.00	19.00	19.00	19.00	19.00	19.00
Portugal	25.00	25.00	25.00	25.00	25.00	23.00	21.00	21.00	21.00	21.00
Romania	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
Slovak Republic	19.00	19.00	19.00	19.00	23.00	22.00	22.00	22.00	21.00	21.00
Slovenia	21.00	20.00	20.00	18.00	17.00	17.00	17.00	17.00	19.00	19.00
Spain	30.00	30.00	30.00	30.00	30.00	30.00	28.00	25.00	25.00	25.00
Sweden	26.30	26.30	26.30	26.30	22.00	22.00	22.00	22.00	22.00	22.00
United Kingdom	28.00	28.00	26.00	24.00	23.00	21.00	20.00	20.00	19.00	19.00

Source: *KPMG (2019)*

APPENDIX C: Summary in the Slovenian language/Daljši povzetek disertacije v slovenskem jeziku

Opredelitev ožjega znanstvenega področja

Namen pričujoče doktorske disertacije je raziskati odnos med poročanjem po (posameznih) državah (angl. Country-by-Country Reporting - CbCR) in agresivnim izogibanjem davkom multinacionalnih bank. Z namenom brzdanja in nadzorovanja agresivnega davčnega vedenja multinacionalnih podjetij je OECD (angl. Organization for Economic and Co-operation and Development – OECD) izdala globalni dokument o zmanjševanju davčne osnove in prenašanju dobička (Base Erosion and Profit Shifting Project/BEPS) (OECD, 2013a). Evropska komisija in G20 sta podprli Akcijski načrt OECD-ja, ki stremi k zagotavljanju povečevanja in plačevanja davkov v pristojnosti področij, znotraj katerih so obdavčitvene dejavnosti izvedene. Tako so večja multinacionalna podjetja dolžna pripraviti letna poročila po državah (CbCR), ki vključujejo podatke za vsako obdavčeno področje, na katerem podjetje posluje, posebej (OECD, 2015a).

Medtem ko je bil bančni sektor prvi, ki je bil dolžan oddati CbCR, doktorska disertacija preučuje učinke povečane davčne transparentnosti multinacionalnih bank. Kot zapoveduje 89. člen Direktive EU o kapitalskih zahtevah IV (CDR IV), je CbCR danes obvezen za vse finančne ustanove s sedežem v katerikoli od 31 držav članic Evropskega gospodarskega prostora (EEA/EGP). Tako implementacija CbCR-ja za finančni sektor Evrospke unije (EU) predstavlja izjemno priložnost za raziskovanje vpliva CbCR-ja na agresivno izogibanje davkom multinacionlnih bank.

V dosedanjih virih in literaturi so bile dejavnosti davčne agresivnosti povezane z organizacijskimi vzpodbudami (McGuire, Omer & Wilde, 2014; Gallemore & Labro, 2015; Higgins, Omer & Phillips, 2015), sivo ekonomijo (Neck, Wächter & Schneider, 2012), korporativno družbeno odgovornostjo (Keung, Qiang & Hao, 2013), davčnimi obveznostmi (Malik, Mihm & Timme, 2018), izvršnimi vzpodbudami (Chyz, 2013; Francis, Iftekhar, Wu & Yan, 2014), delničarskim vplivom (Cheng, Huang, Yinghua & Stanfield, 2012) in vplivom revizijskih podjetij (McGuire, Omer & Wang, 2012). Poleg tega številne študije kažejo znatno povezanost med učinki ugleda in korporativnimi davčnimi dejavnostmi (Graham, Hanlon, Shevlin & Shroff, 2014; Hoopes, Robinson & Slemrod, 2018).

Novejša literatura ponuja jasne dokaze, da banke prenašajo dobiček v države z nižjo davčno stopnjo in se tako izognejo višji obdavčitvi (Merz & Overesch, 2016; Bouvatier, Capelle-Blancard & Delatte, 2017). Poleg tega številne študije kažejo, da multinacionalna podjetja uporabljajo davčne oaze z namenom znižanja davkov. Tako multinacionalna podjetja, katerih hčerinska podjetja imajo sedež v davčnih oazah, znatno znižujejo davčno breme (Dyreng & Lindsey, 2009; Marckle & Shackelford, 2012). Pričujoča doktorska disertacija doprinaša k področju z analizo nadaljnjega učinka implementacije CbCR-ja na davčno agresivnost multinacionalnih podjetij. Natančneje disertacija raziskuje, ali stopnja implementacije CbCR-ja (1. popolna implementacija, 2. popolna neimplementacija ali 3. delna implementacija), ki jo izvajajo multinacionalne banke EU, spreminja tudi stopnjo njihove davčne agresivnosti.

Na podlagi pregledane literature pričujoča disertacija ponuja prvo tovrstno empirično študijo, ki preučuje odnos med stopnjo implementacije na novo uvedenega CbCR-ja in agresivnim izogibanjem davkom (oziroma davčno agresivnostjo)[18]. Hkrati je doktorska disertacija prva študija, ki države EU z razdelitvijo na zahodno- in vzhodnoevropske vzorce razločuje glede na stopnjo agresivnega izogibanja davkom. Poleg tega je pričujoča študija tudi prva svoje vrste, ki preučuje dejansko davčno stopnjo (ETR), gotovinsko dejansko davčno stopnjo (CASHETR) in pa razlike v knjiženih davkih (BTD) z namenom celovitega poročanja o razlikah med davčno agresivnostjo zahodno- in vzhodnoevropskih bank.

Dosedanja literatura se je osredotočala na korporativno izogibanje davkom v Evropi ali Združenih državah Amerike kot celoti (Thomsen & Watrin, 2018), a tu je treba izpostaviti, da ima prav vsaka država svojevrstno ekonomsko in tudi institucionalno strukturo. Z delitvijo Evrope na dve regiji pričujoča disertacija združuje koncept agresivnega izogibanja davkom s številnimi vidiki gospodarskega in institucionalnega razvoja držav, kjer banke poslujejo. Zahodnoevropska regija obsega kapitalsko in gospodarsko stabilnejše in razvitejše države z liberalno demokracijo, medtem ko vzhodnoevropska regija zajema skoraj izključno manj razvite države oziroma države v razvoju, torej države, v katerih je predhodno vladal komunistični režim. Izhajajoč iz zapisanega tako doktorska disertacija preučuje agresivno izogibanjem davkom v številnih evropskih državah in slednje primerja z agresivnim izogibanjem davkom zahodno- in vzhodnoevropskih bank.

Vzhodnoevropski kontekst je odražen v močnem poudarku na ekonomski integraciji z zahodnoevropsko regijo, in sicer s pospešenim prehodom v tržno ekonomijo in prosto menjavo (Hallerberg, 2012). Predstavljene so tudi tesne politične vezi z Zahodno Evropo. Aktivno sodelovanje tujih družb v domači ekonomiji ter pospešena ekonomska in politična integracija so vzhodnoevropskim državam pomagali, da so uspešno premagale izzive prehoda (Lipton, 1990). Poleg tega je politični sistem zahodnoevropskih držav starejši, spremljajo pa ga tudi uveljavljene rodbine političnih strank (Hallerberg, 2012). Med Vzhodno in Zahodno Evropo obstajajo tudi bistvene razlike v lastnostnih davčnih sistemov. Na podlagi omenjenih razlik izpostavljamo, da je treba vzorec razdeliti na dve regiji, da bi lahko preučili in primerjali agresivno izogibanje davkom bank v obeh regijah.

[18] Konceptualni okvir empirične davčne raziskave obsega različne davčne izraze, kot denimo izogibanje davkom.

Namen in cilji

Namen pričujoče doktorske disertacije je prispevati k razpravi o globalnem davčnem sistemu s preučitvijo odnosa med novo uvedenim CbCR-jem in davčno agresivnostjo ter izpostaviti pomembnost teme za davčne oblasti in ostale organe, ki jih skrbi delovanje multinacionalnih bank oziroma njihovo izogibanjem davkom.

Cilj doktorske disertacije je priskrbeti poglobljeno analizo povezave med davčno agresivnostjo in CbCR-jem. Poleg tega so opredeljeni tudi podcilji:

1. opredeliti konstrukte raziskave obračunavanja davkov, s čimer priskrbimo poglobljeno teoretično analizo izogibanja davkom, davčne agresivnosti in CbCR-ja;
2. preučiti odnos med davčno agresivnostjo in družbeno odgovornostjo podjetij, finančnim poročanjem in trgom vrednostnih papirjev;
3. opredeliti odnos med CbCR-jem in davčno agresivnostjo;
4. raziskati razlike v lastnostih davčnih sistemov ter njihov vpliv na davčno agresivnost;
5. predstaviti izsledke raziskave razlik v davčni agresivnosti multinacionalnih bank posameznih držav.

Raziskovalna vprašanja (RV) so opredeljena z namenom pojasnitve točno določenih izzivov davčne agresivnosti in povezanosti le-te z implementacijo CbCR-ja:

RV1. Ali implementacija CbCR-ja zmanjšuje davčno agresivnost bank v EU?

RV2. Ali stopnja implementacije CbCR-ja (1. popolna implementacija, 2. popolna neimplementacija, 3. delna implementacija) spremeni davčno agresivnost bank v EU?

RV3. Kakšna je razlika med davčno agresivnostjo bank s sedežem v vzhodno- in zahodnoevropskih državah?

RV4. Kakšna je vloga lastnosti državnega davčnega sistema pri davčni agresivnosti bank v zahodno- in vzhodnoevropskih državah?

Z namenom ocene učinka CbCR-ja in njegove implementacije na davčno agresivnost multinacionalnih bank v EU opredelim in empirično preverimo tudi naslednji hipotezi:

H1 Stopnja davčne agresivnosti v bankah zahodnoevropskih držav je drugačna od stopnje v bankah vzhodnoevropskih držav.

H2 Implementacija CbCR-ja zmanjšuje davčno agresivnost bank v EU.

H3 Stopnja implementacije CbCR-ja (1. popolna implementacija, 2. popolna neimplementacija in 3. delna implementacija) spreminja davčno agresivnost bank v EU.

Znanstvene raziskovalne metode

Da bi priskrbeli karseda poglobljen vpogled v raziskovalno temo, izvedemo podrobno teoretično in empirično analizo. Pregled literature je opravljen s preučitvijo obstoječih virov s področja obračunavanja davkov. Empirična analiza je osnovana na kvantitativnih podatkih.

Zasnova raziskave izvira iz treh približkov odvisne spremenljivke: dejanske davčne stopnje (ETR-ja), gotovinske dejanske davčne stopnje (CASHETR-ja) in razlike v knjiženih davkih (BTD-ja). Neodvisne spremenljivke so opredeljene, kot sledi: spremenljivke na ravni držav (zakonska davčna stopnja, globalna oziroma ozemeljska obdavčitev, bruto domači proizvod, zapletenost davčnega sistema, pravila tuje odvisne družbe), spremenljivke na ravni družb (velikost banke, donosnost sredstev pred obdavčitvijo, vzvod, neopredmetena sredstva, kapitalska ustreznost, kakovost sredstev, likvidnost, depoziti) in implementacija CbCR-ja.

Empirične analize so izvedene z uporabo vzorca 195 največjih bank v EU (enoletno opazovanje 1.950 podjetij) v 25 državah članicah: zahodnoevropske države (banke s sedežem v Avstriji, Belgiji, na Cipru, na Danskem, Finskem, v Franciji, Nemčiji, Grčiji, na Irskem, v Italiji, Luksemburgu, na Nizozemskem, Portugalskem, v Španiji, na Švedskem in v Združenem kraljestvu) in vzhodnoevropske države (banke s sedežem v Bolgariji, na Hrvaškem, Češkem, Madžarskem, v Litvi, na Poljskem, v Romuniji, na Slovaškem in v Sloveniji). Podatki na ravni držav so zbrani iz številnih virov: iz podatkovne baze Svetovne banke (bruto domači proizvod), iz razpredelnice korporativnih davčnih stopenj KPMG-ja (zakonska davčna stopnja), iz poročil Svetovnega gospodarskega foruma o globalni konkurenčnosti od 2009 do 2018 (pravila tujih odvisnih družb (CFC)) ter iz vira Matheson, Perry in Veung (2013) (globalna oziroma ozemeljska obdavčitev). Finančna poročila so vzeta iz podatkove baze Fitch Connect. Poleg tega so edinstvena poročila CbCR pobrana s 200 spletnih strani komercialnih bank v EU, ki premorejo podatke o implementaciji CbCR-ja v javno razkritih poročilih ali pa so ta objavljena v sklopu letnih, finančnih, CRS in drugih poročil. V empirični analizi smo z namenom ocene učinka implementacije CbCR-ja na davčno agresivnost multinacionalnih bank v EU uporabili metodo DID, na regresijskem modelu podatkov z nespremenljivimi učinki. DID predstavlja statističen pristop, ki se uporablja za preučevanje učinkov obravnave s primerjavo obdobij pred in po implementaciji. Empirične analize so izvedene s pomočjo programa SPSS Statistics 24.0. Zaradi kategoričnih spremenljivk v vzorcu uporabimo Spearmanov koeficient korelacije z namenom ocene neparametričnih koeficientov korelacije med pojasnjevalnimi spremenljivkami. Poleg tega izvedemo tudi oceno kolinearnosti za regresijske modele. Da bi preizkusili občutljivost rezultatov, so uporabljene naslednje pojasnjene metode za oceno manjkajočih vrednosti. Z namenom ponavljanja dobljenih rezultatov z uporabo v celoti dostopnega izvirnega modela uporabimo test Little's MCAR (povsem naključno manjkajoči podatki), da preverimo, ali podatki manjkajo povsem po naključju. Ker je vrednost p-ja manjša od 0.5, zavrnemo ničelno hipotezo, da podatki manjkajo povsem po naključju. To pomeni, da pripisovanje manjkajočih podatkov ne more biti izvedeno z uporabo običajnega pristopa, kot ustreza artimetični sredini. Uporabljeni so lahko le naslednji sodobni pristopi: algoritem EM, večkratno pripisovanje, popolnoma odvisna specifikacija (FCS) in tako dalje. Sama se odločim za uporabo slednje (FCS-ja), metode Monte Carlo Markovske verige (MCMC).

Doprinos k raziskavam o davkih

Pričujoča doktorska disertacija na številnih mestih dopolni predhodne raziskave. Prvič, študija ponudi vpogled v vlogo implementacije CbCR-ja v procesu davčne agresivnosti bank. Posledično tako ponudi ključne empirične rezultate s preučitvijo, ali stopnja implementacije CbCR-ja (popolna implementacija, popolna neimplementacija ali delna implementacija) vpliva na stopnjo davčne agresivnosti bank. Poleg tega pričujoče doktorsko delo dopolnjuje obstoječo literaturo, ki ocenjuje prečni prerez spremenljivk davčne agresivnosti po državah, s pojasnilom, da je CbCR povezan z lastnostmi davčnega sistema države. Drugič, z raziskavo širimo študijo o CbCR-ju, saj priskrbimo empirične rezultate, ki izvirajo iz ročno zbrane baze podatkov v okviru stopnje bančne implementacije CbCR-ja. Tako pričujoča doktorska disertacija okrepi že obstoječo literaturo s področja obračunavanja davkov, saj pojasni, kako se določeni približki davčne agresivnosti spreminjajo glede na stopnjo implementacije CbCR-ja.

Poleg tega pričujoča disertacija pripomore tudi k razširitvi literature s področja davčnih politik, in sicer z zagotavljanjem empiričnih dokazov izogibanja davkom multinacionalnih bank s sedežem v državah Zahodne in Vzhodne Evrope. Disertacija hkrati krepi tudi že obstoječe vire s področja agresivnega izogibanja davkom bančnega sektorja. Medtem ko se Thomsen in Watrin (2018), Dyreng, Hoopes in Wilde (2016) ter Markle in Shackelford (2012) osredotočajo na industrijske družbe, mi priskrbimo rezultate za bančni sektor. Poleg tega omenjene študije še razširimo z analizo tretjega približka za agresivno izogibanje davkom, to je BTD-ja. Pričujoča doktorska disertacija prav tako širi nabor literature o političnem vedenju in politični ekonomiji, s poglobljeno teoretično in empirično analizo razlikovanja med zahodno- in vzhodnoevropskimi državami. Gre za prvo tovrstno študijo, ki preučuje povezavo med agresivnim izogibanjem davkom bank s sedežem v vzhodno- in zahodnoevropskih državah.

Glede na izsledke raziskave je slednja še posebej zanimiva za davčne oblasti, Evropsko komisijo, OECD, centralne banke in druge organe, ki jih skrbi vse večja vrzel med zavedenim in obdavčljivim dohodkom. Tu moramo poudariti, da imajo napori davčnih oblasti za zmanjševanje oziroma preprečevanje izogibanja davkom multinacionalnih družb pozitiven vpliv, saj se je obseg plačevanja davkov bank po letu 2015, torej po implementaciji CbCR-ja, povečal. V svoji raziskavi prikažem učinke uveljavljenega CbCR-ja in predstavim izogibanje davkom različnih regij EU (zahodno- in vzhodnoevropskih držav). Omenjeni izsledki imajo pomemben vpliv na politiko bodočih procesov CbCR-ja in razvoja davčne zakonodaje kot tudi na nadaljnji napredek davčnega

Sistema v državah EU. Upravljalci bank morajo temeljito razmisliti, kako izboljšati davčno poročanje s pomočjo CbCR-ja, da bi dosegli visoko stopnjo ugleda in zaupanja ljudstva ter tako posledično pridobili tudi vero vlagateljev oziroma odločevalcev v poslovnih dejavnostih.

Pregled vsebine

Prvo poglavje doktorske disertacije ponudi enoten konceptualni okvir davčnega izrazoslovja, vključno s poglobljeno študijo davčnega načrtovanja, izogibanja davkom, davčne agresivnosti, davčnih oaz, davčnih bremenitev, davčne utaje, davčnih zatočišč in davčne transparentnosti. Pričujoče poglavje prav tako pojasni družbeno zasnovo davčne raziskave, predstavljene z družbeno odgovornostjo podjetij in davčno moralo. Poleg tega se poglobimo tudi v gospodarske in institucionalne vidike agresivnega izogibanja davkom z razlago tržne ekonomije, politike in lastnosti davčnega Sistema agresivnega izogibanja davkom. Poleg tega se poglavje, razdeljeno na podpoglavja, posveča tudi CbCR-ju. Podpoglavja izpostavljajo institucionalno ozadje CbCR-ja, vsebino poročil CbCR, dobrobiti in stroške CbCR-ja.

Drugo poglavje disertacije se osredotoča na preučevanje že obstoječe literature s področja izogibanja davkom, davčne agresivnosti in CbCR-ja. Pregled že obstoječih virov s področja izogibanja davkom je razdeljen na dva dela – prvi se posveča izogibanju davkom industrijskih družb, drugi pa izogibanju davkom bančnega sektorja. V nadaljevanju predstavimo pregled literature s področja davčne agresivnosti, ki zajema odnose med davčno agresivnostjo in CbCR-jem, finančna poročila in trg vrednostnih papirjev. Naslednje podpoglavje povzame literaturo s področja CbCR-ja, s poudarkom na splošni raziskavi CbCR-ja, učinku davčne transparentnosti na davčno agresivnost in učinku samega CbCR-ja na davčno agresivnost.

Tretje poglavje pričujoče disertacije je posvečeno empiričnemu delu. Omenjeno poglavje pojasni uporabljene metodološke pristope. Nadaljujemo z empiričnimi modeli, meritvami odvisnih spremenljivk, nadzorovanih spremenljivk, z izborom vzorcev in opisno statistiko.

Četrto poglavje predstavlja empirično analizo učinka CbCR-ja na davčno agresivnost. Najprej predstavimo empirične rezultate primerjave agresivnega izogibanja davkom bank v vzhodno- in zahodnoevropskih državah kot tudi razvoj agresivnega izogibanja davkom bančnega sektorja v vzhodno- in zahodnoevropskih državah. V nadaljevanju predstavimo empirične rezultate stopnje agresivnega izogibanja davkom v obdobjih pred in po implementaciji poročanja po (posameznih) državah. Nadaljujemo s predstavitvijo izsledkov preučitve odnosa med davčno agresivnostjo in stopnjo implementacije CbCR-ja (1. popolna implementacija, 2. popolnoma neimplementacija in 3. delna implementacija). Poglavje prav tako zajema analizo občutljivosti rezultatov.

Peto poglavje zajema razpravo o analizi in rezultatih. To poglavje nadaljuje s teoretičnim, metodološkim in pa praktičnim doprinosom disertacije k znanosti. Hkrati so izpostavljene tudi omejitve študije in predlogi za morebitne bodoče raziskave. V šestem poglavju podamo zaključek, nazadnje pa navedemo še uporabljene vire in literature ter dodam priloge.

Razprava o analizi in rezultatih

V prvem delu doktorske disertacije se posvečam teoretičnim vidikom agresivnega izogibanja davkom. S poglobljenim konceptualnim okvirom strokovnega izrazja s področja obračunavanja davkov doktorska disertacija ponudi odgovore na izzive neobstoječih jasnih pojasnil davčnega izrazoslovja. Še pomembnejše je, da konceptualni okvir zagotavlja opredelitve izogibanja davkom in davčne agresivnosti, poleg tega pa ponudi tudi ključne razlike med konstruktoma. Disertacija poda tudi jasno opredelitev bančne davčne agresivnosti. Disertacija ponudi tudi natančno razlago izogibanja socialnim davkom, denimo davčne morale in CSR-ja. Nenazadnje pričujoča disertacija priskrbi tudi odgovor na vprašanje, kako institucije predlagajo in uveljavijo CbCR, kakšne so dobrobiti, kakšni so stroški tovrstnega poročanja in kaj omenjeno poročanje sploh zajema. Poleg tega so nadalje razloženi pojmi izogibanje davkom, davčna agresivnost in CbCR ter njihova vloga v akademski raziskavi. To je pojasnjeno s pregledom literature, ki je predstavljena v teoretičnem delu pričujoče doktorske disertacije.

V drugem delu doktorske disertacije se osredotočamo na implementacijo CbCR-ja in na njegov učinek na davčno agresivnost multinacionalnih bank z odgovori na naslednji raziskovalni vprašanji: (1) ali je implementacija CbCR-ja zmanjšala davčno agresivnost multinacionalnih bank v EU in (2) ali je stopnja implementacije CbCR-ja (1. popolna implementacija, 2. popolna neimplementacija in 3. delna implementacija) spremenila davčno agresivnost multinacionalnih bank v EU. Učinek CbCR-ja smo preučili na vzorcu enoletnega opazovanja 1.950 različnih družb iz 25 držav članic EU. Podatke na ravni držav smo zbrali iz različnih virov (podatkovne baze Svetovne banke, razpredelnice korporativnih davčnih stopenj KPMG-ja, globalnih poročil o konkurenčnosti in iz povezane študije (Johansson, Skeie in Sorbe (2016)). Finančni podatki za evropske banke so pridobljeni iz podatkovne baze Fitch Connect. Poleg tega smo podatke o stopnji implementacije CbCR-ja pridobili iz različnih dokumentov, denimo iz letnih poročil, finančnih izkazov, poročil CbC in CSR. Osredotočali smo se predvsem na to, ali je banka v celoti implementirala CbCR ali ga je v celoti prezrla ali pa ga je implementirala le delno. Izvedli smo tudi analizo ETR-ja, CASHETR-ja in BTD-ja evropskih bank v obdobju pred in po implementaciji, da bi dognali učinek implementacije. Na osnovi analize v obdobju po implementaciji CbCR-ja v multinacionalnih bankah v EU beležimo znatno zmanjšanje agresivnega izogibanja davkom. Izsledki kažejo, da imajo banke, ki javno razkrijejo svoja poročila CbC in zagotovijo popolno implementacijo CbCR-ja, nižjo stopnjo davčne agresivnosti kot pa banke z delno implementacijo CbCR-ja.

Poleg tega ugotavljamo, da se banke, ki poslujejo v državah z zapletenim davčnim režimom in pravili tuje odvisne družbe (CFC), redkeje izogibajo davkom. Zaznavamo znatno zmanjšanje agresivnega izogibanja davkom, kar ugotovim z analizo CASHETR-ja bank s popolno implementacijo CbCR-ja. Poleg tega ugotavljamo, da je BTD v državah s strožjimi standardi revizije in poročanja nižji, posledično pa se banke v EU tudi redkeje agresivno izogibajo davkom. Nenazadnje pa empirični rezultati kažejo, da je povečana davčna transparentnost, kot posledica implementacije CbCR-ja, pomembno orodje za zmanjševanje in preprečevanje agresivnega izogibanja davkom multinacionalnih bank.

V tretjem delu doktorske disertacije se osredotočamo na analizo institucionalnih, ekonomskih in političnih vidikov agresivnega izogibanja davkom, z upoštevanjem razlik med državami, kjer imajo banke svoje sedeže. S primerjavo institucionalnih in gospodarskih struktur države EU razdelimo na dve regiji, zahodno- in vzhodnoevropske države. Ta del disertacije poda odgovor na naslednje raziskovalno vprašanje: kakšna je razlika med agresivnostjo zahodno- in vzhodnoevropskih držav? Z uporabo empiričnih podatkov, uporabljenih že v predhodni empirični analizi, dokažemo, da sta oba izmerjena približka agresivnega izogibanja davkom, ETR in CASHETR, višja v zahodnoevropskih bankah. Poleg tega ugotavljamo, da je BTD zahodnoevropskih bank nižji od BTD-ja vzhodnoevropskih bank, kar nakazuje na to, da so vzhodnoevropske banke bolj izpostavljene agresivnemu izogibanju davkom. Zanimivo je dejstvo, da imata ETR drugačno težnjo. Zahodnoevropske banke kažejo padajoči trend ETR-ja v obdobju 10 let.

Poleg tega doktorska disertacija podaja odgovor tudi na naslednje raziskovalno vprašanje: kakšna je vloga lastnosti davčnega sistema v agresivnem izogibanju davkom v zahodno- in vzhodnoevropskih državah? Izsledki kažejo tudi, da se banke v EU redkeje izogibajo davkom v državah z višjo zakonsko davčno stopnjo (STR), uveljavljenim globalnim davčnim pristopom (WWTAX) in obstojem pravil za tuje odvisne družbe (CFC). Izsledki kažejo, da so banke, ki delujejo v že več desetletij delujočih tržnih ekonomijah, manj izpostavljene agresivnemu izogibanju davkom kot banke, ki delujejo v tržnih ekonomijah v razvoju. Poleg tega je izogibanje davkom manj prisotno v državah s starejšimi političnimi sistemi, ki jih določajo uveljavljene rodbine političnih strank. Hkrati so banke v EU s sedežem v manj razvitih državah z neurejenimi javnimi institucijami, pomanjkljivo učinkovitostjo uradnih ustanov in nestanovitnim davčnim sistemom bolj izpostavljene agresivnemu izogibanju davkom.

V zaključku doktorske disertacije povzamemo prepričanje, da bodo ti rezultati znatno vplivali na boj EU proti izogibanju davkom in na bodoč razvoj zakonodaje CbCR-ja. Pridobljeni empirični rezultati političnim odločevalcem jasno kažejo, da je CbCR učinkovito orodje za preprečevanje agresivnega izogibanja davkom. Ključni razlog je to, da so banke, zaradi pritiskov CRD IV, začele plačevati več davkov, kar je seveda povečalo razkorak med davki, ki jih plačujejo v obdobju po implementaciji Direktive, in davki, ki so jih banke plačevale prej. Bodoč razvoj in okrepljene spremembe CbCR-ja, kot tudi samo prilagajanje različnim lastnostim posameznih držav, lahko delujejo kot močno orodje za odvračanje od oziroma preprečevanje agreisvnega izogibanja davkom podjetij.