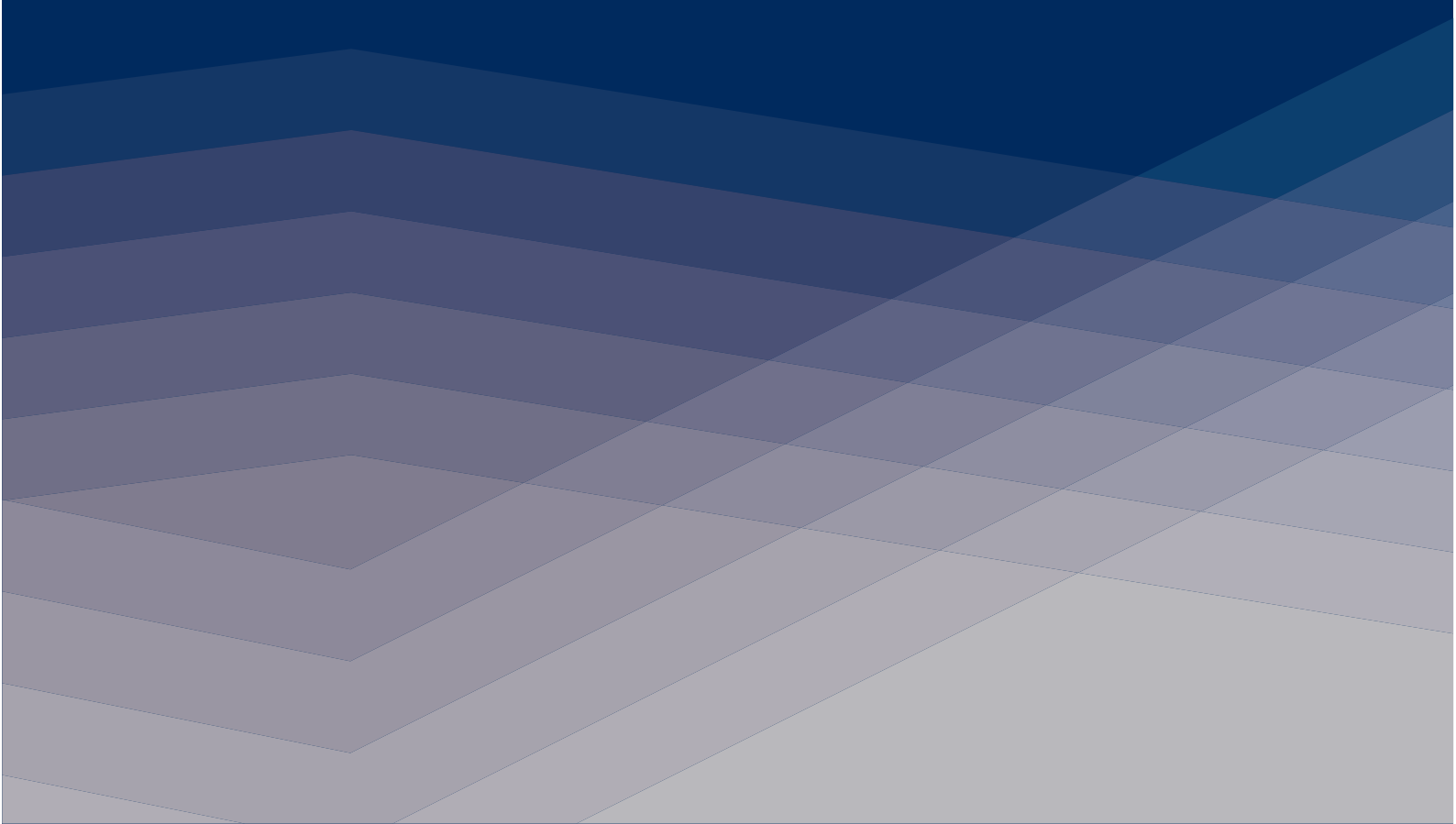


INCREASING TAX TRANSPARENCY

Evidence of the Impact on International
Businesses and Stakeholders

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Increasing Tax Transparency – Evidence of the Impact on International Businesses and Stakeholders

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LIST OF ABBREVIATIONS

ABN	Company Name and Business Identification Number (Australia)
ANOVA	Analysis of Variance
ATO	Australian Taxation Office
AUD	Australian Dollar
AVE	Average Variance Extracted
B2C	Business-to-Consumer
BEA	Bureau of Economic Analysis
BEPS	Base Erosion and Profit Shifting
BTD	Book-Tax Difference
BvD	Bureau van Dijk
CAAR	Cumulative Average Abnormal Return
CAD	Canadian Dollar
CAPM	Capital Asset Pricing Model
CbC	Country-by-Country
CbCR	Country-by-Country Reporting
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CFR	Code of Federal Regulations
CMB	Common Method Bias
CR α	Cronbach's α
CRA	Canadian Revenue Agency
CRD IV	Capital Requirements Directive IV
CRS	Common Reporting Standard

CSR	Corporate Social Responsibility
DAC	Directive on Administrative Cooperation
DF	Degrees of Freedom
DFG	German Research Foundation (Deutsche Forschungsgemeinschaft)
DOTAS	Disclosure of Tax Avoidance Schemes
DTT	General Trusting Disposition
EBA	European Banking Authority
EDGAR	Electronic Data Gathering, Analysis, and Retrieval System
EEA	European Economic Area
EFA	Exploratory Factor Analysis
ESG	Environmental, Social and Governmental
ESTMA	Extractive Sector Transparency Measures Act
ETR	Effective Tax Rate
EUR	Euro
FASB	Financial Accounting Standards Board
FACTA	Foreign Account Tax Compliance Act
FIN 48	FASB Interpretation No. 48
G7	Group of Seven
GAAP	Generally Accepted Accounting Principles
GBP	Pound Sterling
GRI	Global Reporting Initiative
HHI	Herfindahl-Hirshman Index
HMRC	Her Majesty's Revenue and Customs
IAS	International Accounting Standards
IFRS	International Financial Reporting Standards

IRS	Internal Revenue Service
ISO	International Organization for Standardization
ITB	Intention to Book
JPY	Yen
MCAA	Multilateral Competent Authority Agreement
MD&A	Management Discussion and Analysis
MN	Moral Norms
MNE	Multinational Enterprise
MSCI	Morgan Stanley Capital International
NACE	Nomenclature of Economic Activities
NGO	Non-governmental Organization
NIP	Taxpayer Identification Number (Poland)
OECD	Organisation for Economic Cooperation and Development
OTSA	Office of Tax Shelter Analysis
P2P	Peer-to-Peer
PE	Permanent Establishment
PRRT	Petroleum and Rent Tax (Australia)
R&D	Research and Development
RegFD	Regulation Fair Disclosure
RI	Total Return Index
RMSEA	Root Mean Square Error of Approximation
ROA	Return on Assets
S&P	Standard & Poor's
SARS	South African Revenue Service
SD	Standard Deviation

SEC	Securities and Exchange Commission
SFAS	Statement of Financial Accounting Standards
SFL	Danish Tax Code (Skatteforvaltningsloven)
SIC	Standard Industrial Classification
SRMR	Standardized Root Mean Square Residual
TIEA	Tax Information Exchange Agreement
TIP	Trust in Provider
TPHC	Taxpayer Privileges and Honor Card Program
TTC	Australian Tax Transparency Code
USD	United States Dollar
UTB	Unrecognized Tax Benefit
UTP	Uncertain Tax Position
VAT	Value-added Tax
VUK	Turkish Tax Code (Vergi Usul Kanunu)
XML	Extensible Markup Language
ZEW	Centre for European Economic Research (Leibniz-Zentrum für Europäische Wirtschaftsforschung)

1 Introduction

The increasing mobility of corporate value drivers, paired with the emergence of new data-driven business models, facilitates corporate tax planning and challenges the established framework of international business taxation (Griffith et al., 2014; Heckemeyer & Overesch, 2017; Klein et al., 2022). In their efforts to safeguard tax revenues, policymakers have identified the lack of relevant information about corporate taxpayers as a significant obstacle to effectively preventing base erosion and profit shifting (BEPS). Consequently, many countries have implemented tax transparency regulations over the last two decades, partially influenced by the BEPS Actions of the Organisation for Economic Cooperation and Development (OECD) (OECD, 2013). In addition, public tax disclosure is gaining momentum as taxes are gradually recognized as an integral part of corporate social responsibility (CSR) (Avi-Yonah, 2014). The inclusion of a separate section on taxation in the sustainability reporting standard of the Global Reporting Initiative (GRI) and the introduction of a public Country-by-Country Reporting (CbCR) for large firms in the EU substantiate this development.

The policy rationale for mandating tax transparency is twofold. The primary intention of increasing private tax transparency is to reduce the information asymmetry between the taxpayer and tax authorities, thereby facilitating the detection of aggressive tax planning arrangements. Public tax transparency, in contrast, aims at encouraging morally acceptable behavior by holding businesses publicly accountable for paying a fair share of taxes (Devereux et al., 2011; Lagarden et al., 2020).

The implementation of new policies has spurred academic research in this area. Yet, the existing literature mainly focuses on the effect of tax transparency on corporate tax planning (e.g., Edwards et al., 2021; Henry et al., 2016; Joshi, 2020). Thus, the empirical evidence on the costs and benefits of tax transparency is still at an early stage. In light of the increasing relevance of the topic, it is essential to understand in which contexts (public) tax transparency could be beneficial for regulators or affected firms and when such measures may create

unintended consequences. This dissertation aims to enrich the ongoing debate among academics, policymakers, and practitioners by answering the following research questions:

- 1) Considering the rising interest in corporate tax transparency, what is the current state of research and which questions are still to be explored?
- 2) Can tax transparency by service providers serve as a trust-building mechanism for consumers in markets with high information asymmetries?
- 3) How do investors evaluate the requirement for large European firms to disclose previously confidential CbCR information publicly?
- 4) What modifications might be necessary to improve the consistency and effectiveness of the existing CbCR framework of the OECD?

The thesis consists of four self-contained sections that address the research questions. The sections are based on four individual research papers written with different co-authors and prepared as submissions for publication in academic journals. Table 1 provides an overview of the papers underlying each section, lists the co-authors and summarizes the publication status as well my own key contributions to the papers.

Section 2 is based on the paper “On the Determinants and Effects of Corporate Tax Transparency: Review of an Emerging Literature”, co-authored with Christoph Spengel and Heiko Vay. The section addresses the first research question outlined above. The study presents the first review of the emerging literature on corporate tax transparency. First, my co-authors and I propose a framework to structure the diverse landscape of tax-related disclosures. We discuss the conceptual underpinnings of tax transparency in a second step. The discussion links the concept of tax transparency with established theories from financial accounting and CSR reporting research. In the main part, we survey empirical evidence on corporate tax transparency. To this end, we classify the findings into (i) determinants of firms’ voluntary and discretionary tax disclosure decisions, (ii) informativeness of different kinds of tax-related

disclosure, and (iii) effects of increased tax transparency on firms and their stakeholders. Lastly, we synthesize the main inferences and derive suggestions for future research.

Section 3 is based on the paper “How Do Tax Compliance Labels Impact Sharing Platform Consumers? An Empirical Study on the Interplay of Trust, Moral, and Intention to Book”, co-authored with David Dann, Ann-Catherin Werner, Timm Teubner, Alexander Mädche and Christoph Spengel. The section focuses on tax transparency in the context of the platform economy and addresses the second research question. The platform economy has generated various new and highly successful business models. However, certain models facilitate tax evasion for service providers on income earned on these platforms. While tax evasion contradicts the prosocial claim of many sharing platforms, it is unclear whether a provider’s tax honesty constitutes a value for consumers. In this study, my co-authors and I investigate the role of tax compliance for platform users by employing an online experiment. The results indicate that consumers perceive providers’ tax compliance and consider it a trust-enhancing signal. In further analysis, we find that consumers’ moral norms moderate both the signal’s trust-building effect and the relation between trust and transaction intention. Given the recent policy debates around taxing the platform economy, this study provides valuable insights for practitioners and tax legislators.

Section 4 is based on the paper “How Do Investors Value the Publication of Tax Information? Evidence from the European Public Country-by-Country Reporting”, co-authored with Christoph Spengel and Stefan Weck. The section addresses the third research question of this thesis. The study examines the capital market reaction to the EU’s announcement to introduce a public CbCR regime. By employing an event study methodology, my co-authors and I estimate a significant cumulative average abnormal return (CAAR) between -0.484% and -0.660%, which translates into a monetary value drop between Euro (EUR) 48-65 billion. We conclude that investors evaluate reputational risks arising from public scrutiny and proprietary costs to outweigh the potential benefits of an extended information environment. In cross-

sectional tests, we find that the average investor reaction is more pronounced for firms with higher reputational risks. Furthermore, we document a stronger market reaction for firms with higher proprietary costs. When assessing the relative importance of the two channels, our results indicate that the reputational channel is more relevant for investors. Our inferences are particularly important in light of the ongoing debates on introducing similar disclosure rules in other countries.

Section 5 is based on the paper “How to Move Forward with Country-by-Country Reporting? A Qualitative Content Analysis of the Stakeholders’ Comments in the OECD 2020 Review”, co-authored with Miles Schönrock and Christoph Spengel. The section addresses the last research question of this thesis. The study investigates whether the current OECD approach on CbCR is fit for purpose and which modifications would improve the consistency and effectiveness of the reports. The analysis builds on a qualitative assessment of stakeholder comments to a public consultation document of the OECD, which was part of the major 2020 review on CbCR. We critically review the proposed adjustments and current developments to derive recommendations for moving forward. The key recommendation is that the OECD should focus on technical adjustments such as a multi-year approach and harmonized notification requirements. However, major conceptual changes should be streamlined with the outcomes of the negotiations on a global minimum tax to reduce complexity and improve legal certainty.

Section 6 concludes by summarizing the key findings of this thesis.

Table 1: Co-authors and Publication Status of Papers

Sec.	Paper	Co-authors	Publication status	Own key contribution
2	On the Determinants and Effects of Corporate Tax Transparency: Review of an Emerging Literature	Christoph Spengel Heiko Vay	<i>ZEW Discussion Paper</i> No. 20-063 (prepared for a submission)	<ul style="list-style-type: none"> • Positioning of the paper • Detailed overview and structured classification of tax transparency regulations • Conceptualization of categorization scheme to structure the literature • Qualitative review and evaluation of empirical literature • Interpretation and contextualization of findings • Summary of results and implications for future research
3	How do tax compliance labels impact sharing platform consumers? An empirical study on the interplay of trust, moral, and intention to book	David Dann Ann-Catherin Werner Timm Teubner Alexander Mädche Christoph Spengel	Published in <i>Information Systems and e-Business Management</i> (2022)	<ul style="list-style-type: none"> • Introduction and positioning of the paper • Research and description of institutional background • Review of the related literature and development of hypotheses • Development of classification scheme for qualitative responses • Interpretation of results • Discussion of theoretical and practical implications • Conclusion
4	How Do Investors Value the Publication of Tax Information? Evidence from the European Public Country-by-Country Reporting	Christoph Spengel Stefan Weck	<i>ZEW Discussion Paper</i> No. 21-077 (prepared for submission to <i>The Accounting Review</i>)	<ul style="list-style-type: none"> • Introduction and positioning of the paper • Description of institutional background • Development of hypotheses • Data collection and preparation • Econometric analysis including event study approach, difference-in-differences analysis, cross-sectional tests, and robustness checks • Interpretation of results • Summary of results and conclusion
5	How to Move Forward with Country-by-Country Reporting? A Qualitative Content Analysis of the Stakeholders' Comments in the OECD 2020 Review	Miles Schönrock Christoph Spengel	Published in <i>World Tax Journal</i> (2022)	<ul style="list-style-type: none"> • Introduction and positioning of the paper • Conceptualization of qualitative research design • Complementary analysis and cross-sectional tests • Interpretation of results and development of recommendations • Summary of results and conclusion

2 A Review of the Emerging Literature on Corporate Tax Transparency¹

2.1 Introduction

This study provides a thorough review of the emerging literature on corporate tax transparency at the intersection of financial accounting and corporate tax planning research. Tax minimization strategies of large multinational enterprises (MNEs) have received considerable attention from the media, the public, and policymakers in the last decade. The OECD (2017) estimates that the worldwide annual revenue losses due to profit shifting amount to United States Dollar (USD) 100 – 240 billion. Curbing this behavior is a challenging task for tax authorities and legislators. The underlying tax planning strategies are mostly legal and often exploit a lack of coordination of national tax laws. In addition to specific anti-avoidance rules, policymakers worldwide have adopted several tax disclosure mandates in recent years to increase the transparency of corporate taxpayers. Tax transparency is expected to reduce MNEs' tax avoidance through three channels: (1) tax authorities could use the incremental information to enhance their audit scrutiny and efficiency; (2) legislators could discover legal loopholes and subsequently adjust tax law; and (3), in case of (threatened) public disclosures, firms may be disciplined by increased accountability to the general public, which may exercise pressure on companies to pay their “fair share” of taxes.

Academic interest in tax transparency started to grow in parallel to the developments on the political level. The increase in academic research was partially driven by the demand for

¹ This section is joint work with Christoph Spengel and Heiko Vay. It is published as ZEW Discussion Paper 20-063. The published discussion paper reflects the status of the literature and tax transparency regulations as of August 2020. To ensure consistency, this section refers to the version of working papers as of August 2020. The later chapters may cite more recent versions of these working papers if they have become available at a later point in time. We are especially grateful to Elisa Casi for her valuable support during the compilation of the relevant literature and for the fruitful discussions. We appreciate helpful suggestions and comments from Rodney Brown, Lisa De Simone, Dirk Simons, and the seminar participants at the Joint Workshop on Business Taxation 2020, University of Brescia. We also thank Klara Birck and Felix Fischer for excellent research assistance. We gratefully acknowledge financial support from the Leibniz Science Campus MannheimTaxation, from the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) – Project-ID 403041268 – TRR 266, and from the Graduate School of Economic and Social Sciences of the University of Mannheim.

empirical insights on the causes and effects of tax transparency. Moreover, new datasets and testable settings became available to researchers with the introduction of respective regulations. Figure 1 illustrates the trend in research on this topic.² Given the surge of empirical research and the variety of settings examined, existing studies provide heterogeneous and partially conflicting findings, making it challenging to interpret the observed outcomes. We strive to solve this issue by providing a structured analysis of the diverse literature that allows us to put the empirical evidence into perspective and to derive general conclusions on the current state of research. In particular, we aim to address the following aspects concerning tax transparency. First, which factors determine the tax disclosure choices of firms? Second, are the different tax disclosure mandates effective and, relatedly, are there unintended side effects of increasing tax transparency?³ Third, how does tax disclosure relate to insights from financial reporting and CSR reporting? Finally, we point out areas where we currently lack conclusive evidence and highlight promising avenues for future research.

For the purpose of the study, we understand “tax transparency” as the state or outcome achieved by tax disclosure. In this vein, tax disclosure is defined as the communication of initially private tax-related information by an issuer to one or several recipients, either on a mandatory or voluntary basis. Thus, tax disclosure covers a broad set of different disclosure types ranging from confidential⁴ tax reporting to public disclosures issued by firms and third parties (such as tax authorities or the media). Importantly, tax disclosures create transparency of the taxpayer towards the tax authority and, potentially, the public. To keep the length of our review tractable, we limit the focus to the transparency of corporations, where we can draw

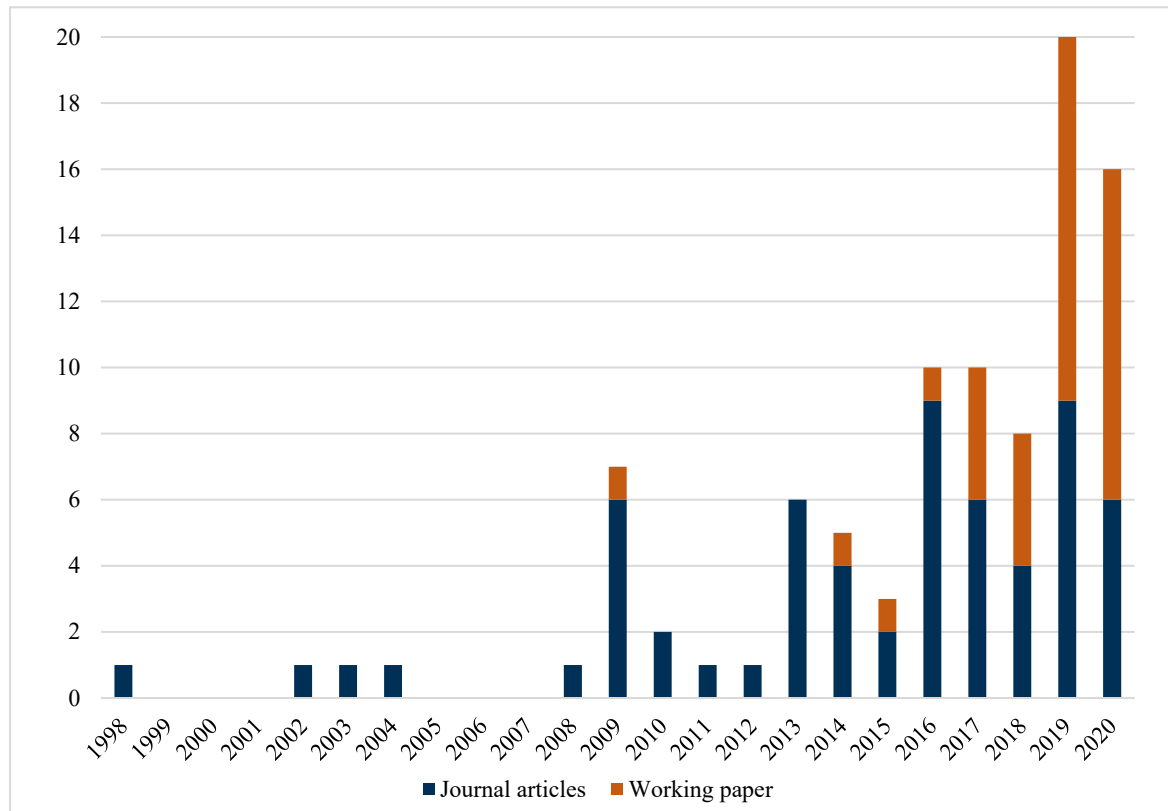
² Given the novelty of the topic, we consider articles published in academic journals as well as working papers in our review.

³ We note that it is not the purpose of our review to scrutinize the desirability of the political goal to reduce tax avoidance. While we consider potential unintended real effects (e.g., changes in firms’ investment and employment) in response to tax transparency, we discuss neither potential implications for global welfare nor societal effects regarding the perceived fairness of the tax system.

⁴ We use the terms “private” and “confidential” disclosure interchangeably.

from established evidence and theories from accounting research. Further, we only consider transparency concerning corporate income taxes, excluding other levies such as indirect taxes.

Figure 1: Empirical Studies on Tax Transparency by Year and Publication Status



Notes: Figure 1 depicts the number of empirical studies on tax transparency by year and publication status. We include all studies on tax transparency which we refer to in our review of the empirical literature (Sections 2.4-2.6 and/or which are summarized in Appendix 2. Studies investigating multiple research questions and/or disclosure type are counted only once. The “working paper” category also includes two dissertations. The total number of studies is 94.

Previous literature reviews in the field of tax research have advanced our understanding of income tax accounts in financial statements, their application for measuring tax avoidance, and corporate tax avoidance behavior in general (Graham et al., 2012; Wilde & Wilson, 2018; and, in particular, Hanlon & Heitzman, 2010). However, surveys on the role of tax accounts are inherently confined to financial statements or even specific accounting regulations (e.g., FIN 48, see Blouin & Robinson, 2014) and neglect other potentially relevant sources of information. Moreover, prior reviews instead focus on the accounting information contained in tax items relating to inferences about future firm performance, earnings quality, and earnings

management (Graham et al., 2012; Hanlon & Heitzman, 2010). In contrast, we mainly consider studies that examine the information content with regard to companies' tax planning behavior. Nevertheless, we also briefly touch on current studies at the intersection of these topics.

Since corporate decisions on the level of tax avoidance are not made independent of disclosure choices, it is essential to understand which factors determine tax disclosure behavior and how disclosure decisions interact with actual tax avoidance. Prior surveys on corporate tax avoidance comprehensively review studies that examine the tax behavior of multinational firms (Dharmapala, 2020; Dyreng & Hanlon, 2019) as well as the determinants and, more recently, the effects of corporate tax planning (Brühne & Jacob, 2019; Wilde & Wilson, 2018).⁵ While tax avoidance is typically measured using financial statement items, existing reviews pay little attention to the role of tax disclosure. As tax transparency rules are designed to curb tax avoidance, some overlap in reviewed studies may naturally arise. However, we complement existing reviews by adding the perspective of the recipients of tax-related disclosures. Specifically, we survey empirical evidence on the effects of corporate tax transparency on stakeholders, including investors, analysts, consumers, and tax authorities. Our analysis provides a comprehensive overview of the current state of the rapidly evolving literature on tax transparency.

In light of the multitude of different disclosure channels and tax disclosure requirements, we propose a framework to classify disclosure types along with certain characteristics. Our primary distinction is between private and public disclosures due to the different sets of recipients. We further distinguish according to the issuer of the information and the degree of obligation (mandatory versus voluntary) to account for differing disclosure incentives. Based on this structure, we provide a concise overview of selected types of disclosure and a detailed description of a multitude of initiatives and rules currently in place across countries in

⁵ Brühne and Jacob (2019) briefly point to the benefits of lower transparency for tax aggressive firms, but do not discuss the nuances of this relationship, especially with regard to tax transparency.

Appendix 2. This overview serves as a basis to understand common features and heterogeneity in the settings and allows to assess the diversity in empirical findings of the reviewed studies. Besides, it may also help researchers to identify interesting research settings.

Given the novelty of the topic, we elaborate on theoretical underpinnings of tax transparency by drawing on established disclosure theories from financial accounting and CSR reporting research (i.a., Beyer et al., 2010; Christensen et al., 2019; Leuz & Wysocki, 2016). We point to common features and distinct characteristics of tax disclosure and argue that the results from accounting or CSR reporting research do not necessarily generalize to tax disclosure settings.⁶ Moreover, we discuss the potential costs and benefits of tax transparency identified in conceptual and normative literature and link this conceptual discussion with the growing empirical evidence on tax transparency. To provide a structure for the review, we divide empirical research into three categories, starting with analyses of the determinants of tax disclosure decisions. Second, we assess recent evidence on the information content of tax disclosures, focusing on new datasets and new types of disclosure. Finally, we survey empirical studies that examine the effects of tax disclosure rules on firm behavior as well as the reactions of stakeholders to changes in the level of tax transparency.

Our analysis of extant empirical literature on tax transparency leads to the following conclusions. First, roughly one-third of the papers within our scope analyze determinants of tax disclosure decisions, with the reporting firm's tax avoidance level being the most well-researched determinant. Empirical evidence suggests an ambiguous relationship. While tax aggressive firms are more inclined to reduce transparency by concealing sensitive hard-fact information in mandatory disclosures, they also tend to issue more supplemental tax-related information either to legitimize their tax arrangements or to reduce information asymmetries arising from their tax avoidance activities. Evidence on other firm characteristics and attributes

⁶ Regarding the empirical evidence on tax disclosure, we refer to insights from the financial reporting and CSR reporting literature where appropriate.

is highly context-specific, making it difficult to draw general conclusions on the nature of the relationship.

Second, regarding the informativeness of tax disclosures, recent studies show that the quantitative information contained in novel CbCR data may complement existing profits shifting estimations in terms of country coverage. However, missing variables and limited comparability across reports might limit their usefulness. Besides, early evidence on qualitative tax disclosures is mixed, and it remains up to future research whether such disclosures can enhance our understanding of corporate tax behavior.

Third, most studies within our scope analyze the effects of tax transparency on firms and their stakeholders. Extant evidence shows that firms try to prevent falling under additional disclosure rules, suggesting that the disclosure is perceived as costly. Despite some evidence of affected firms adjusting certain tax planning strategies, the effects on overall tax avoidance are inconclusive for most regulations. Importantly, firms seem able to substitute scrutinized tax arrangements with alternative strategies. Moreover, recent studies document real responses by firms (e.g., changes in the location of investments and employment), implying further unintended consequences of transparency mandates.

Finally, regarding effects on recipients, it remains uncertain whether the proposed benefits of disclosure actually materialize. Research on investors' responses is concentrated on stock price reactions, which only capture the aggregate effect of all costs and benefits that investors expect. So far, little is known about how investors actually utilize the disclosed information. Similarly, there is no evidence whether analysts use tax disclosures from novel transparency regimes as existing studies on analysts are confined to the narrow setting of voluntary earnings forecasts and conference calls. Surveys and laboratory experiments show that revelations of corporate tax planning have adverse effects on the perception of firms by consumers. Yet, there is no conclusive or large-scale evidence that the reputational costs materialize in the form of changes in purchase behavior. Lastly, and despite their particular role

as the primary recipient of tax disclosures, there is almost no evidence on whether and how tax authorities access or use information from tax-related disclosures.

In sum, these findings question the effectiveness of tax disclosure mandates and, in particular, whether tax transparency efficiently achieves its envisioned purpose. As the strength of the documented effects varies across disclosure types, policymakers should carefully reconsider the design of the implemented measures.

Our review of the empirical literature shows that we are still only at the beginning of empirical research on tax transparency despite the progress made over the last years. Based on our conclusions, we derive seven promising areas that warrant additional investigation. First, future research would benefit from a comprehensive theoretical framework that incorporates the different incentives managers face concerning tax disclosure decisions. Such a framework would enable researchers to derive precise predictions on tax disclosure behavior and reconcile conflicting findings across various settings. Second, we suggest that future studies examine the role of (tax) executives regarding disclosure decisions within firms to shed light on the association with the simultaneous decisions on tax planning. Third, we look forward to research on the interaction effects between public and private disclosure requirements or between mandatory and voluntary disclosures. More precisely, future studies should examine whether different sets of disclosure act as substitutes or complements. Fourth, there is room for further research on the informativeness of qualitative disclosures, such as tax strategy reports or CSR reports, in light of their growing importance. For instance, such studies may address the questions of whether the disclosed information is verifiable or incrementally useful for recipients. Fifth, it seems worthwhile to combine and compare the information contained in various quantitative and qualitative disclosure types and develop more nuanced tax avoidance measures. Sixth, future research should investigate confidential disclosure requirements for tax planning arrangements, with a particular focus on the effects on firms, intermediaries, and tax

authorities. Lastly, we encourage further research on how recipients process and prioritize tax-related information and how this ultimately affects their decision-making.

The remainder of the study is structured as follows. In Section 2.2, we define tax transparency and briefly explain its characteristics before we provide a structured overview of tax disclosures rules and initiatives. Section 2.3 illustrates the conceptual underpinnings of tax transparency, together with a discussion of potential costs and benefits. We review existing empirical literature based on the three categories outlined above in Sections 2.4 to 2.6. Finally, we summarize our findings and specify our suggestions for future research in Section 2.7.

2.2 Overview of Tax Transparency Rules and Initiatives

2.2.1 Background, Definitions, and Scope

The current landscape of tax transparency and tax disclosures is diverse. While we aim to give a broad picture of this area, we necessarily have to limit our review's scope to a certain extent for coherence. In general, we understand "tax disclosure" as the communication of initially private tax-related information by an issuer to one or several recipients, either on a mandatory or voluntary basis. "Tax transparency" describes the result or the state achieved by tax disclosures, i.e., improved recipients' knowledge. Based on this general understanding, we delineate the scope of our review as follows.

First, our study only includes disclosures that convey information about a taxpayer, creating transparency of the taxpayer towards the tax authorities, towards other selected recipients, or towards the general public. Conversely, we do not review any forms of transparency of the tax administration towards the public (such as information about administrative rulings or administrative efficiency). Second, we interpret the term "tax disclosure" rather broadly, containing not only explicit reporting about taxes but also any other kind of potentially tax-related information (e.g., geographic reporting). In the same vein, both quantitative and qualitative disclosures are included. Third, our study is confined to information about (multinational) enterprises and their income taxes. We do not examine the disclosures of

individuals due to significant differences regarding the costs and benefits of tax transparency and owing to a lack of comparability with financial and CSR reporting.

Fourth, following economic and legal literature, we make a conceptual distinction between legal and illegal practices to reduce the income tax burden (Dharmapala, 2020; Gravelle, 2009; Slemrod & Yitzhaki, 2002). Therefore, we define tax evasion as an intentional illegal activity (e.g., concealing taxable income from the tax authorities), which constitutes a criminal offense in many countries. In contrast, tax avoidance and tax planning denote legal measures undertaken by a company to minimize its tax payments. Importantly, these measures do not affect substantive economic outcomes (Dharmapala, 2017).⁷ Tax avoidance and tax planning encompass a wide range of instruments from the use of tax advantages explicitly granted by the legislator to rather aggressive transactions that may be perceived as “illegitimate”, “unethical”, or complying only with the letter but not with the spirit of the law. Despite the clear theoretical separation, we acknowledge that there is a “grey area” between legal and illegal activities in practice. Delimitation problems arise from ambiguities in tax law, such as discretion regarding the acceptable range of arm’s-length transfer prices (Gravelle, 2009). Due to the resulting uncertainty, tax avoidance and tax planning can be subject to the risk that certain tax position cannot be sustained in a potential tax dispute (Blaufus et al., 2019).

For the purpose of our study, we exclude transparency rules and initiatives that clearly aim at fighting tax evasion due to its distinct legal assessment. These measures are primarily targeted at individuals anyway (Dharmapala, 2020). Instead, we focus on disclosures conveying information about companies’ legal efforts to reduce their income tax burden. To prevent practical problems of delimitation, we also include the “grey area” of legally questionable activities in this category and collectively refer to it as tax avoidance or tax planning.⁸ Within

⁷ This characteristic distinguishes tax avoidance and tax planning from behavioral responses to taxation (e.g., changes in investments and employment).

⁸ We note that extant literature has not agreed upon a uniform understanding of the terms “tax avoidance” and “tax planning”. While some authors define tax planning as the “ethical” and tax avoidance as the “unethical” forms of tax behavior (e.g., Middleton & Muttonen, 2020), others rather view tax planning as a generic term

this framework, profit shifting, i.e., the (artificial) allocation of MNEs' profits to low-tax countries, represents one important subset of tax avoidance instruments (Dharmapala, 2020).

The following subsection presents a structured classification of the current landscape of tax-related disclosures. To this end, we extracted the different disclosure rules set out in the national reports on tax transparency for 29 countries contained in Başaran Yavaşlar and Hey (2019). We complemented this source by financial reporting regulations, international tax transparency initiatives (e.g., by the OECD and the EU), and other types of mandatory or voluntary disclosures investigated by the empirical studies, which we review in Sections 2.4 to 2.6. From this collection, we selected all types of disclosures which match the criteria described above.

2.2.2 *Structured Classification of Tax Transparency Rules and Initiatives*

In order to enable a comparison of the heterogeneous types of disclosure falling under our scope, Figure 2 provides a graphical overview of our classification. Appendix 1 presents selected details for individual rules and initiatives of particular interest.

The different disclosures could be distinguished along several dimensions, such as the issuing party or the character of the disclosure (mandatory or voluntary). However, our primary distinction criterion is between public disclosures (i.e., available to every recipient) and private disclosures (i.e., available only to selected recipients). As the potential costs and benefits largely depend on who has access to the information, we expect considerable differences between both groups. Besides, considering the specific role of the tax authority as a recipient, private disclosure plays a much more important role in tax research than in the related areas of financial reporting and CSR reporting research. Within the broad category of public disclosure, a

and tax avoidance as a subset (e.g., Wilde & Wilson, 2018). Since we do not attempt to distinguish according to moral or ethical dimensions, we follow Graham et al. (2014) and use tax avoidance and tax planning interchangeably to refer to all legal (and “grey-area”) measures to reduce a company's tax burden. In contrast, the terms “approach to tax” and “tax strategy” describe a broader concept. In addition to a companies' attitude towards tax planning, this concept comprises other components such as tax governance and the relationship with tax authorities.

significant distinction can be made as to the issuer. If firms publish the information by themselves, they can usually exercise some discretion even within mandatory requirements. This is typically not the case if a third party carries out the publication. Consequently, extant research on the determinants of tax disclosure decisions (as surveyed in Section 2.4) is limited to settings of information communicated by firms.

2.2.2.1 Public Tax Disclosure

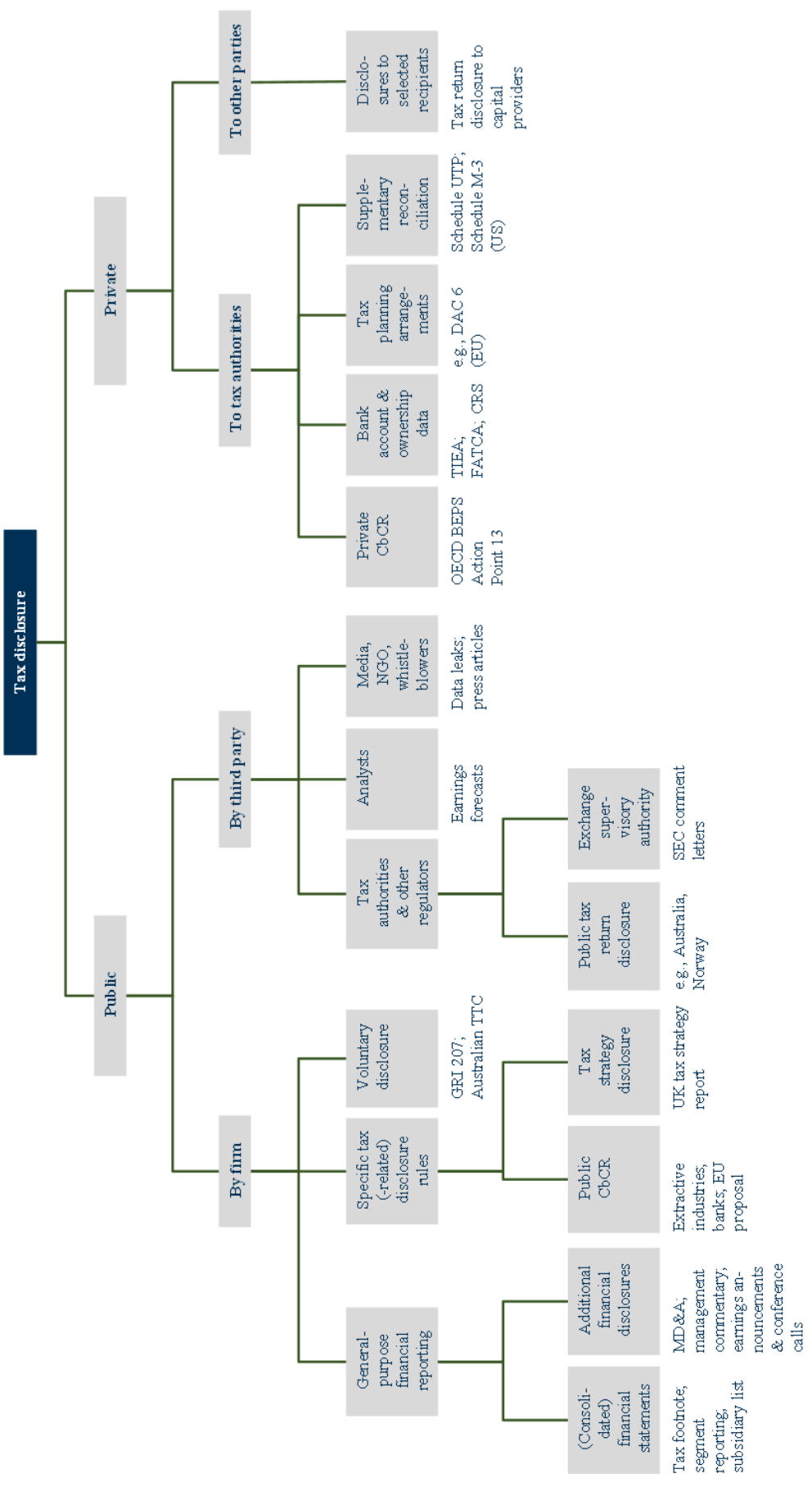
Tax-related disclosures contained in companies' general-purpose financial reporting serve as our starting point. The main objective of financial reporting standards such as the US Generally Accepted Accounting Principles (GAAP) and the International Financial Reporting Standards (IFRS) is to provide investors with decision-useful information.⁹ Although not their primary goal, certain financial reporting disclosures can indicate a firm's tax planning. In this vein, the notes to the (consolidated) financial statements constitute the primary source of potential information. We briefly discuss the most relevant disclosures required in the financial statements of listed US and EU firms in the following (see Section I.A of Appendix 1 for more details).¹⁰

First of all, US firms registered with the Securities and Exchange Commission (SEC) are obliged to provide a breakdown of their pre-tax income and income tax expense into domestic and foreign. This rough geographical split gives a first indication of how the tax burden differs between domestic and foreign operations. EU firms do not face a similar requirement, but some report the information voluntarily.

⁹ See Section 2.3.1 for a detailed discussion of the objectives of general-purpose financial reporting.

¹⁰ Note that our examination of financial reporting is limited to disclosure requirements (and their information content with regard to tax planning). For a summary of material accounting rules on the recognition and measurement of income tax items, see Graham et al. (2012) and the appendix of Hanlon and Heitzman (2010).

Figure 2: Classification of Tax Disclosure Rules



Notes: Figure 2 illustrates the classification of tax disclosure rules and initiatives.

More details are revealed in the mandatory “tax reconciliation”, i.e., a reconciliation of the GAAP effective tax rate (ETR) to the statutory (federal) tax rate, either in absolute amounts or percentages. This disclosure can provide evidence of foreign earnings subject to tax in low-tax countries. However, their occurrence does not necessarily point to profit shifting but may simply reflect a company’s international distribution of real activities. Deviations between the ETR and the statutory tax rate can also arise due to permanent book-tax differences (BTDs), i.e., differences between the accounting and tax treatment of certain transactions that will not revert future periods. Such permanent BTDs are potentially indicative of non-conforming tax avoidance.

In contrast, temporary BTDs (i.e., differences between the accounting and tax valuation of an asset or liability which will revert at some time in the future) have to be recognized as deferred tax assets or liabilities, accompanied by comprehensive disclosure obligations. Within an MNE group, temporary BTDs can also arise from retained earnings of foreign subsidiaries. However, under certain prerequisites, firms may designate such retained earnings as permanently reinvested to avoid recognizing a deferred tax liability for any taxes due upon repatriation. In this case, specific disclosures are required in the notes. Under the former worldwide tax system in the US, this option was highly relevant for US MNEs in the context of tax planning through low-tax subsidiaries.¹¹

Another item often perceived as particularly informative of tax planning are the so-called unrecognized tax benefits (UTBs). According to US GAAP, companies have to record a contingent liability to accrue tax expense for potential future tax authority adjustments. The issuance of FIN 48 as of 2007 did not only reform the recognition and measurement of UTBs but also introduced comprehensive disclosure requirements in the notes, increasing transparency regarding a firm’s controversial tax positions.

¹¹ While the relevance has decreased considerably after the Tax Cuts and Jobs Act of 2017, BTDs from investments in foreign subsidiaries can still arise, e.g., due to foreign withholding taxes or state taxes.

Apart from the tax footnote itself, other information in the notes may also indicate a company's tax planning behavior. Both US GAAP and IFRS require certain geographic disclosures in the segment reporting. While most firms disaggregate their segments according to non-geographic criteria, MNEs are obliged to show at least a breakdown of their revenues and long-lived assets into domestic and foreign. Combined with the corresponding analysis of pre-tax income and tax expense (see above), these disclosures may enable first inferences regarding the alignment of economic activity, profit allocation, and tax payments. However, the separation into domestic and foreign is still highly aggregated. Finally, the list of subsidiaries included in the consolidated financial statements can reveal an MNE's number of tax haven presences. The EU Accounting Directive¹² mandates disclosure of all subsidiaries in the notes. In contrast, US firms only have to report significant subsidiaries in Exhibit 21 to their 10-K filings.

While a complete set of financial statements has to be published annually, listed firms have to file quarterly (US) or half-yearly (EU) interim reports, including condensed financial statements. These filings are accompanied by additional mandatory disclosures, such as the management discussion and analysis (MD&A) and risk factor disclosures (US) or the management commentary (EU), which can also contain quantitative and qualitative information about tax planning (e.g., in the form of tax risks). Finally, many firms voluntarily issue (quarterly) earnings announcements as press releases, followed by conference calls with analysts.

Due to the evolving trend towards more tax transparency, specific rules have been introduced, which require public tax(-related) disclosures by firms, complementing the information from general-purpose financial reporting. One of the most important concepts is CbCR. It discloses economic activity indicators, allocated pre-tax profits, and income taxes

¹² Directive 2013/34/EU, hereinafter referred to as the Accounting Directive.

separately for each country where an MNE maintains subsidiaries or branches. This information is supposed to help recipients assess whether a company pays its “fair share” of income taxes in each country, corresponding to its economic activities. Section I.B of Appendix 1 provides an overview of current public CbCR regimes.

The idea of CbCR was first proposed for the extractive industries, driven by the objective of reducing corruption rather than tax avoidance. Accordingly, the items to be disclosed here are more focused on the different kinds of payments between firms and governments (including taxes) and less on economic activity. The EU, Canada, and the US have passed CbCR requirements for the extractive industries. Still, the publication has not come into effect in the US yet due to ongoing disagreement regarding the final rules to be issued by the SEC. In 2013, the EU adopted a public CbCR for financial institutions to restore trust in this sector after the financial crisis by creating transparency on corporate tax behavior and public subsidies. Finally, policymakers in the EU have discussed proposals of a general public CbCR requirement for all large MNEs since 2016, but no agreement has been reached so far.

Unlike the quantitative information of CbCR, the UK has recently introduced the mandatory disclosure of a tax strategy report for firms above a certain size threshold. This report is supposed to state qualitative information about a company’s risk management and governance concerning tax, its attitude towards tax planning, and its relationship with the tax authority (see Section I.C. of Appendix 1). While this type of disclosure principally demands the most explicit information about tax planning, its qualitative nature inherently bears the risk of firms using platitudes and boilerplate language, thereby limiting the reports’ usefulness.

Apart from all these mandatory rules, firms can, of course, always decide to publish tax-relevant information voluntarily. This may be done by either adding supplemental explanations or figures to obligatory disclosures or issuing other kinds of tax-related information, e.g., within voluntary CSR reports or as a separate tax contribution report. While we cannot cover the whole variety, we briefly review two voluntary disclosure frameworks (see Section I.D. of

Appendix 1). The decision of whether to commit to these frameworks is completely voluntary. Still, if a firm wants to label its disclosure as compliant, it has to apply specific rules of the framework. The Australian Tax Transparency Code (TTC) proposes both quantitative elements (e.g., a reconciliation of accounting profit to tax expense and income tax paid) and qualitative disclosures on the approach to tax (similar to the content of the UK tax strategy report). More importantly, the GRI, an international non-profit organization issuing the most widely adopted sustainability reporting standards, has recently adopted a new standard for reporting on tax practices (GSSB, 2019a). Besides qualitative information on the approach to tax and tax governance (again similar to the UK tax strategy report), this standard demands a public CbCR with a comprehensive list of tax-related items to be recorded per country.

As illustrated in Figure 2, tax-related public disclosures can also be issued by a third party who has either access to private information or an advantage in interpreting certain information. Obviously, tax authorities receive such confidential data through firms' tax returns and other filings. Section II of Appendix 1 describes a selection of public tax return disclosure regimes that are (or were) in place in different countries worldwide. Most of these regimes have in common that tax authorities regularly publish certain items from annual tax returns (e.g., taxable income, taxes paid) of all or of the largest resident companies. The information is either accessible on a central website of the tax authority or upon request in local tax offices. The main objective of these regimes is usually to ensure transparency regarding companies' domestic tax payments and hold the companies accountable towards the general public.¹³ Furthermore, a comparison of the public tax return data with financial statement information can improve the understanding of a firm's tax planning behavior.

Public disclosures by other regulators such as exchange supervisory authorities may also contain tax-related information. For example, the SEC regularly reviews US-listed firms'

¹³ Note that the public tax return disclosure in Turkey and the THPC program in Pakistan (both outlined in Section II of Appendix 1) rather follow the idea of a "public praising" as they only report on the "top taxpayers" each year.

annual 10-K filings and issues comment letters when a filing is deficient or needs further clarification. Upon resolution of the issue, the comment letter and the firm's response are published by the SEC. Tax-related deficiencies may reflect firms' efforts to hide tax avoidance activities.

Finally, at least two other parties can be identified as sources of public information about firms. First, analysts play an important role as information intermediaries on the stock market. For the largest firms, they issue their own earnings forecasts (implicitly including the expected ETR), which may or may not be superior to management's forecasts. Second, confidential information on companies' tax avoidance activities can also be revealed by whistle-blowers in the course of data leaks (such as Lux Leaks, Panama Papers, or Paradise Papers). Even apart from such major leaks, numerous press articles in the last decades have uncovered and discussed the tax planning strategies of individual MNEs (see Middleton & Muttonen, 2020).

2.2.2.2 Private Tax Reporting

We now turn to the second broad category, private disclosure, i.e., the communication of information to selected parties only. Private disclosures can either be made by the firms themselves or by other actors with access to the information (e.g., intermediaries such as banks and advisors). Since the related costs and benefits within this category largely depend on who obtains the information, we further distinguish according to the recipient and start with the tax authorities as the most common one (see Figure 2).

First, an essential disclosure requirement is the confidential CbCR proposed by the OECD (2015) as part of its BEPS Action Plan, which has already been implemented by more than 80 countries worldwide (see Section III.A. of Appendix 1). In contrast to the other CbCR regimes described above, the reports are not made public. Large MNEs have to file the report to the tax authority in charge (usually in the headquarter country). The national authorities of the participating countries automatically exchange the data between each other. As a part of the

transfer pricing documentation, the CbCR information is supposed to help tax authorities to assess transfer pricing risks and to identify and evaluate other profit shifting risks.

Second, in the course of the trend towards more transparency, the international exchange of bank account and ownership data has considerably increased within the last decade. The development started with bilateral agreements between countries on the exchange of tax information upon request, so-called tax information exchange agreements (TIEAs). It progressed to frameworks for the automatic exchange of information, such as the Foreign Account Tax Compliance Act (FATCA) for the US and the multilateral Common Reporting Standard (CRS). We do not focus on these exchange agreements since they are primarily targeted at fighting tax evasion (and other illegal activities) of wealthy individuals. Nevertheless, they can provide tax authorities with information on companies' international tax avoidance activities to a certain extent.

Third, several countries have adopted regimes requiring the disclosure of specific tax planning arrangements (see Section III.B of Appendix 1 for an overview). These regimes set out specific criteria under which a transaction has to be reported to the tax authorities, typically including that a tax advantage constitutes the main benefit of the transaction. The disclosure obligation is usually upon the promoter of the arrangement and/or upon the company implementing it. Tax authorities can then assess whether the reported transactions actually comply with tax law and can promptly inform legislators about necessary actions to close existing loopholes. The most important regime is the Directive on Administrative Cooperation (DAC) 6,¹⁴ which applies in the EU as of July 2020 and which stipulates an automatic exchange of the disclosed information between member states.

Fourth, our classification includes two forms of supplementary reconciliations to be filed in the US, along with the annual tax return (see Section III.C of Appendix 1). Schedule M-3

¹⁴ Council Directive (EU) 2018/822, hereinafter referred to as DAC 6.

requests a very detailed reconciliation of financial statement income to US taxable income, distinguishing between temporary and permanent differences. Schedule UTP, introduced about four years after FIN 48, requires firms to itemize and describe the US portion of UTBs, which are disclosed as an aggregate in the notes to the financial statements. Both Schedules provide the US tax authorities with incremental information compared to companies' public disclosures, helping to detect tax avoidance and increase tax audit efficiency.

Finally, firms may issue private disclosures to any other selected recipient who has the power to demand such information. For example, influential equity investors or creditors sometimes request the tax returns (usually of smaller firms), which can either serve them as an additional measure of firm performance or to assess the risks resulting from tax planning.

As shown in this subsection, even within our limited scope of tax transparency, there is a plethora of tax-related disclosures differing across several dimensions. It is crucial to be aware of this heterogeneity and the potential interplay between different kinds of disclosures when assessing the results of the empirical studies examining various settings.

2.3 Conceptual Underpinnings of Corporate Tax Disclosure

2.3.1 Theories from Financial Reporting

While research on tax transparency is just emerging, there is abundant theoretical, analytical, and empirical literature on financial reporting and accounting disclosure.¹⁵ To assess whether these insights might generalize to tax transparency, we provide a concise overview of the theoretical background of corporate disclosure. The demand for accounting information arises for two main reasons. First, ex-ante, managers usually have better information about the firm's prospects than potential investors. In addition, managers have incentives to overstate the expected profitability of the firm. If capital providers cannot assess the true value, they will underprice (overprice) firms with high (low) profitability. This results in adverse selection

¹⁵ We refer the reader to the excellent reviews of Beyer et al. (2010), Healy and Palepu (2001), Leuz and Wysocki (2016), and Verrecchia (2001).

referred to as the “lemons problem” (Akerlof, 1970; Healy & Palepu, 2001). Disclosure can solve this problem by mitigating information asymmetry, which constitutes the “valuation role” of accounting (Beyer et al., 2010). Second, ex-post, the separation between ownership and control gives rise to agency problems, as self-interested managers are able to expropriate investors’ funds (Healy & Palepu, 2001). Agency problems can be addressed by aligning the interests of managers and investors through optimal contracts. Disclosures are needed to monitor compliance with these contracts, representing the “stewardship role” of accounting (Beyer et al., 2010). It follows that (potential) outside investors on the capital markets are the primary addressees of financial reporting.

One of the key questions of accounting research is whether (and to what extent) mandatory disclosure requirements are necessary. The unraveling argument posits that, under ideal conditions, firms will voluntarily disclose all information (Grossman & Hart, 1980; Grossmann, 1981; Leuz & Wysocki, 2016; Milgrom, 1981). As described above, adverse selection leads to an underpricing of all firms with above-average projected profitability. Thus, above-average firms have an incentive to communicate private information to signal that they are better than their competitors (signaling theory). As soon as these firms have disclosed, investors will rationally adjust the other companies’ price downwards, creating incentives for those in the remaining group whose value is now above the new market price to disclose. In the end, all firms (except the very worst) voluntarily reveal their private information (Leuz & Wysocki, 2016). However, the unraveling argument rests on several assumptions that are not fulfilled in most settings (Beyer et al., 2010). Most importantly, disclosures are usually not costless for firms (Verrecchia, 2001). Absent mandatory rules, rational managers will therefore decide to publish information only if the expected benefits exceed the expected costs.

The accounting literature has developed several economic-based theories and hypotheses that explain the incentives and disincentives for managers regarding their voluntary disclosure decisions. Based on the signaling theory and the “valuation role” of accounting, the capital

market transaction hypothesis suggests that managers are particularly inclined to communicate information prior to issuing equity or debt since a reduction in information asymmetry will decrease the cost of capital (Healy & Palepu, 2001). Related to the agency theory and the “stewardship role” of accounting, managers may voluntarily report information to reduce monitoring costs and convince shareholders that they act in their interests (A. Watson et al., 2002). Conversely, managers may decide to withhold information to avoid unwanted scrutiny by investors (Graham et al., 2005). Other theories focus on managers’ self-serving motivations to issue disclosure in more specific settings, including the stock-based compensation, corporate control contest, and management talent signaling hypothesis (Beyer et al., 2010; Healy & Palepu, 2001). Finally, several economic-based theories reflect the different types of costs associated with disclosure. Proprietary costs (from submitting commercially sensitive information to competitors), litigation costs (related to forward-looking disclosures), political costs (from unwanted attention and reactions of regulators), and the risk of setting a disclosure precedent constitute considerable disincentives for managers (Dye, 1986; Graham et al., 2005; Healy & Palepu, 2001; Leuz & Wysocki, 2016; Verrecchia, 2001).

In a perfect market, managers will optimally trade off the different costs and benefits so that their voluntary disclosure decisions result in an efficient level of information production (Healy & Palepu, 2001). Consequently, mandatory disclosures are only justified if they produce an outcome that is socially more desirable than the market solution (Beyer et al., 2010; Leuz & Wysocki, 2008). In this vein, a major argument for reporting requirements is that public disclosures imply financial and real externalities. Disclosures of one firm potentially convey implicit information about other firms and affect their real decisions, so that the social value of disclosure exceeds its private value to the publishing firm (Christensen et al., 2019; Leuz & Wysocki, 2016). Besides, mandatory rules can cause market-wide cost savings due to enhanced comparability of financial reporting. The threat of strict sanctions can serve as a cost-effective way to credibly commit to frequent disclosures (Beyer et al., 2010; Leuz & Wysocki, 2016).

Finally, disclosure regulation can inhibit potential deadweight losses arising from the expropriation of outside investors by managers (Leuz & Wysocki, 2008). Despite these social benefits, it has to be noted that the implementation and enforcement of mandatory disclosure regimes are costly and associated with their own problems, e.g., firms trying to capture the regulatory process (Beyer et al., 2010). Thus, it is not self-evident whether mandatory rules actually achieve an outcome that is socially preferable to the market solution (Christensen et al., 2019).

In summary, owing to the absence of a unifying and comprehensive theory, it remains rather challenging to justify the need for mandatory disclosure regimes (Beyer et al., 2010; Verrecchia, 2001). While the net effects of such regimes are ultimately an empirical issue, recent reviews of Beyer et al. (2010) and Leuz and Wysocki (2016) emphasize that we still largely lack empirical evidence on real effects, market-wide effects, and externalities. Thus, they conclude that the pervasiveness of disclosure regulation in developed capital markets such as the US is an unanswered question to date, which warrants more research.

We now briefly assess to what extent these theoretical underpinnings also generalize to tax disclosure. Financial reporting primarily serves the purpose of reducing information asymmetry between managers and (potential) outside investors to mitigate adverse selection and agency problems. By construction, this also applies to tax information contained in general-purpose financial reporting. In contrast, the main objective of most other types of tax disclosure is to reduce corporate tax avoidance and to align the international allocation of firms' taxable income with the distribution of economic activity. These differing objectives are also reflected in the groups of addressees. While financial reporting is primarily targeted at outside investors on the capital market, the potential audience of tax disclosures is broader. Many tax-related disclosures are of interest to investors as well, since they inform about tax risks and may even contain other economic information (e.g., CbCR data also reveal the geographic distribution of activities). However, the primary addressees are usually tax authorities, legislators, and the

general public. Within this group, tax authorities undoubtedly play a particular role as firms' tax planning decisions directly affect the tax revenues raised, and as tax authorities likely use the information disclosed when assessing a company's tax liability. This particularity also manifests in the fact that several tax transparency rules and initiatives stipulate a private disclosure to tax authorities only. Conversely, financial reporting inherently requires a publication of the information to fulfill its purpose.

We conclude that, at least with regard to public tax-related disclosures, it is generally possible to build upon the insights of accounting research on the (dis-)incentives affecting disclosure decisions and the implications of mandatory reporting regimes. Private disclosures to tax authorities, however, are a distinctive feature of the tax setting.

2.3.2 *Theories from CSR Reporting*

Apart from revelations about corporate tax avoidance, the growing size, power, and internationalization of the world's largest companies have also more generally shifted the focus of non-governmental organizations (NGOs) and the general public to the issue of CSR (Middleton & Muttonen, 2020). Following Christensen et al. (2019), we define CSR as “corporate activities and policies that assess, manage, and govern a firm's responsibility for and its impact on society and the environment.” To meet the rising demand, MNEs have increased their CSR activities and the related public disclosures (in the following referred to as “CSR reporting”), which has spurred theoretical and empirical research.¹⁶ In recent years, many countries have introduced some form of CSR-related reporting mandates that often follow the “comply or explain” principle. Due to the lack of uniform reporting requirements under this principle, managers have substantial discretion regarding their CSR reporting decisions.¹⁷

¹⁶ Christensen et al. (2019) provide a thorough and comprehensive review of this literature.

¹⁷ In the EU, Directive 2014/95/EU – hereinafter referred to as the Non-Financial Reporting Directive – introduced a mandatory CSR reporting requirement for listed firms as of 2017. Given the qualitative nature of the disclosure, firms have flexibility to disclose the information they consider most useful.

In addition to the economic-based theories described in the previous subsection, researchers have applied three socio-political theories to explain firms' incentives for voluntary CSR reporting. First, the stakeholder theory suggests that CSR activities are undertaken, and disclosures are issued if there is enough demand from stakeholders. Corporate decisions need to balance the potentially diverging interests of different stakeholders (Lanis & Richardson, 2013; Middleton & Muttonen, 2020). Second, legitimacy theory is based on the idea of a "social contract". Failing to conform to societal expectations may cause companies to lose their legitimacy. Firms conduct CSR activities and report on them to avoid this existential threat (Deegan, 2002; Hardeck & Kirn, 2016). Third, the institutional theory assumes that the extent of CSR activities and reporting depends on the institutions in the environment in which a company operates. Normative and coercive forces (e.g., the codification of CSR reporting standards) as well as mimetic forces (e.g., following best practice) drive companies CSR disclosure decisions (Middleton & Muttonen, 2020).

As for financial reporting, rational managers will voluntarily publish CSR information if the expected benefits exceed the expected costs. Accordingly, mandatory disclosure regimes are only justified if they generate a socially more desirable outcome (Christensen et al., 2019). In this context, however, it has to be added that introducing mandatory reporting can impose social pressure on individual firms to improve their CSR performance. Since many CSR activities mitigate negative externalities (e.g., a reduction in pollution) or create public goods, a CSR reporting obligation can indirectly give rise to social benefits above those described for mandatory financial reporting (Christensen et al., 2019).

The growing awareness for CSR and corporate tax behavior has initiated a discussion among academics and practitioners of whether a firm's approach to tax constitutes an element of its CSR and, consequently, whether CSR reporting should contain certain tax-related disclosures. Proponents argue that the tax contribution of an MNE is part of its economic responsibility, as governments are supposed to use the tax revenues to the benefit of society

(Middleton & Muttonen, 2020; Sikka, 2010). Opponents challenge the implicit assumption that the government always employs the funds more efficiently for social benefits. They point out that companies can utilize tax savings for hiring employees, for research and development (R&D) investments (which are typically associated with positive externalities), or for performing their own CSR activities (A. K. Davis et al., 2016; Middleton & Muttonen, 2020). Empirical evidence on the relationship between CSR activities and corporate tax behavior is mixed. Some studies document that higher CSR scores are associated with lower tax aggressiveness, suggesting that managers perceive CSR and responsible tax behavior as complements (Hoi et al., 2013; Lanis & Richardson, 2012). Other studies find that firms with better CSR performance exhibit higher levels of tax avoidance, consistent with managers increasing CSR activities to offset adverse reputational effects from tax avoidance (A. K. Davis et al., 2016; Lanis & Richardson, 2013). L. Watson (2015) observes that the relationship between CSR and tax avoidance varies with firms' earnings performance.

Despite their mixed results, all these studies provide evidence of at least some relation between the approach to tax and CSR. Moreover, descriptive analyses suggest that MNEs increasingly include tax-related disclosures in their CSR reports (Hardeck & Kim, 2016; Middleton & Muttonen, 2020). This development is also reflected in the fact that the GRI as an issuer of the most widely adopted framework for voluntary CSR reporting has recently devoted a separate standard to reporting on tax practices (see Section 2.2.2.1). We thus infer that an analysis of tax transparency should also draw on the insights from CSR reporting research. Accordingly, some of the distinctive features of CSR reporting identified by Christensen et al. (2019) apply to tax disclosure as well. First, public tax disclosure is also characterized by a broader group of users than financial reporting, including less sophisticated recipients such as consumers. Second, tax disclosures are – to some degree – subject to diverse objective functions since corporate tax behavior faces the conflict between profit maximization and fulfilling the interests of other stakeholders (e.g., tax authorities and the society in general). Third, while

many forms of tax-related information are monetary by its nature, qualitative disclosures (e.g., on the tax strategy) bear the problem of diversity in measurement. Forth, although the obligation to pay tax is clearly based on legal provisions, managers can decide to what extent they want to engage in tax planning. Combined with the discretion in disclosure rules, tax disclosures – like CSR reporting – can also be subject to a dual endogeneity, which complicates empirical analyses (Christensen et al., 2019).

In summary, the conceptual underpinnings of tax transparency are multi-faceted. Some elements of tax disclosure belong to (or at least are closely related to) financial reporting; some elements are perceived as part of (or share features with) CSR reporting; and to some extent, tax disclosures are distinct due to the particular role of tax authorities and the pervasiveness of private disclosures to this specific group of recipients.

2.3.3 Conceptual Discussion of Tax Disclosure

Unlike financial and CSR reporting, theoretical literature dealing with (dis-)incentives for voluntary tax disclosure is mostly missing (except for Middleton & Muttonen, 2020). However, considering the commonalities between the different corporate disclosure types, we show how economic-based and socio-political theories can also be applied to discretionary tax disclosure decisions. We focus on disclosure incentives first (Section 2.3.3.1) and discuss the disincentives later in the context of the firm-specific costs resulting from mandatory tax transparency regimes (Section 2.3.3.2).

2.3.3.1 Theories on Voluntary Tax Disclosure

Among the economic-based theories, the signaling theory suggests that companies with favorable information have an incentive to disclose to differentiate from their competitors. With respect to corporate taxes, the theory posits that companies that assume that their tax-related information will be perceived positively as an indication of responsible tax behavior will disclose voluntarily (Hardeck & Kirn, 2016; Middleton & Muttonen, 2020). This mechanism may even explain voluntary private disclosures to tax authorities, sending a signal of tax

compliance to reduce audit scrutiny. According to the agency theory, managers issue voluntary disclosures to reduce the costs of monitoring by shareholders (or refrain from publication to avoid unwanted shareholder scrutiny). As summarized by Hanlon and Heitzman (2010), corporate tax planning is subject to specific agency implications. While (risk-neutral) shareholders expect managers to maximize profits, including efficient tax planning decisions, the interests of (risk-averse) managers may differ. Contracts can be designed to align the interests, and disclosures can serve as a control mechanism (Wilde & Wilson, 2018). In contrast, research has also provided evidence that managers exploit the complexity and opacity associated with tax avoidance activities to extract private benefits to the detriment of shareholders (Atwood & Lewellen, 2019; Desai et al., 2007; Desai & Dharmapala, 2006).¹⁸ In this vein, managers may issue voluntary disclosures to demonstrate that they abstain from such self-serving behavior.

Turning to socio-political theories, the stakeholder theory explains voluntary disclosures as a response to certain stakeholders' demand. Taxation is particularly salient from this perspective since tax authorities (or, more generally, governments) as a stakeholder group have a direct interest in the resulting tax revenues (Hardeck & Kirn, 2016; Middleton & Muttonen, 2020). While this request could be satisfied by private disclosure, the increased attention to corporate tax behavior has also triggered the demand of other stakeholder groups for public disclosure. In line with the legitimacy theory, a firm's aggressive tax behavior can be perceived as a breach of the "social contract" and potentially result in consumer boycotts. Companies facing such a threat have incentives to publicly disclose information to explain their behavior and regain their legitimacy (Lanis & Richardson, 2013; Middleton & Muttonen, 2020). Finally, the institutional theory posits that a firm's institutional environment shapes the extent of voluntary tax disclosure. This environment includes normative and coercive forces (e.g.,

¹⁸ See also the following Section 2.3.3.2 for more details on the relationship between tax avoidance and extraction of private rents by managers.

voluntary tax disclosure frameworks) as well as mimetic forces (e.g., companies adapting to the disclosure practices of their industry peers; Middleton & Muttonen, 2020).

In summary, the incentives identified for voluntary accounting and CSR disclosures are also effective for public (and some even for private) tax disclosure decisions. While the economic-based theories suggest that companies already paying their “fair share” of taxes are more inclined to disclose, socio-political theories rather predict disclosures of firms accused of aggressive tax behavior and/or subject to increased tax-related stakeholder scrutiny (Hardeck & Kirn, 2016). Ultimately, it is an empirical question which incentives prevail under which conditions. We review extant evidence on the determinants of tax disclosure decisions in Section 2.4.

2.3.3.2 Costs and Benefits of Mandatory Tax Disclosure

So far, the conceptual literature on tax transparency is primarily focused on assessing the potential costs and benefits arising from mandatory tax disclosure regimes and on evaluating whether the different regimes are likely to achieve the goal of reducing tax avoidance. In the following, we aim to give an outline of the current state of the discussion. Unless indicated otherwise, the respective costs and benefits pertain to both public and private disclosure.

To begin with, tax transparency mandates are supposed to entail capital market benefits for firms for at least two reasons. First, to the extent that tax-related public disclosures contain incremental financial information about the firm, they can mitigate adverse selection problems on the capital market in the same manner as financial reporting. This results in increased stock market liquidity and reduced cost of capital (Cockfield & MacArthur, 2015; Healy & Palepu, 2001). Second, as indicated above, some studies suggest a complementary relationship between tax avoidance and the extraction of private benefits by managers (Atwood & Lewellen, 2019; Desai & Dharmapala, 2006). Managers have an incentive to conceal their tax avoidance activities from tax authorities. To this end, they reduce the informativeness of both public and private disclosures. In turn, the resulting opaqueness creates some latitude for managers to

divert private rents from the tax savings at the expense of shareholders (Hanlon et al., 2014). Desai et al. (2007) posit that stronger tax enforcement can inhibit such behavior if tax authorities are able to identify cases of unacceptable tax avoidance.¹⁹ To the extent that additional tax disclosure requirements render private rent extraction less attractive, outside shareholders may reward the reduced costs for the monitoring of managers. This effect may even occur in case of private disclosure to tax authorities, as the findings of Desai et al. (2007) suggest that improved monitoring by the tax administration can limit managerial diversion.

Apart from benefits for capital markets, tax disclosure requirements can lead to better decisions by managers as they are forced to produce certain information (Hanlon, 2018). In combination with more effective monitoring by outsiders, managers may ultimately make more efficient investment decisions (Christensen et al., 2019; Leuz & Wysocki, 2016).

Most conceptual literature, however, deals with the various costs imposed on firms. Obviously, many tax disclosure regulations give rise to direct costs, including one-off costs for the implementation of a reporting system and recurring costs for the preparation, auditing (if required), and publication of the data (Devereux et al., 2011; Evers et al., 2017). As parts of these costs are fixed, disclosure requirements can be particularly burdensome for smaller companies (Leuz & Wysocki, 2016).

More importantly, mandatory tax disclosures imply several indirect or implicit costs for firms. First, it is the stated purpose of many regulations to curb corporate tax avoidance. If companies do not compensate for reduced tax planning opportunities (e.g., by relocating activity as described below), they will face increased tax expense. To the extent that firms bear the corporate tax burden, their after-tax profits will decline. A related, albeit unintended, side effect of certain tax disclosure rules (particularly of CbCR) lies in the risk that the tax authorities

¹⁹ While the tax authority may be regarded as minority shareholder due to its tax claim on corporate profits (Desai et al., 2007; Hanlon & Heitzman, 2010), it should be noted that the tax authority is not interested in reducing agency conflicts between managers and shareholders per se. Its objective is to secure corporate tax payments in accordance with the applicable tax laws (Desai et al., 2007; Hanlon et al., 2014).

of some countries might use the information to justify unilateral transfer pricing adjustments (Evers et al., 2017; Hanlon, 2018). Consequently, MNEs are either confronted with double taxation or at least with rising controversy costs.

Second, the potential costs identified as disincentives for voluntary financial disclosure decisions (see Section 2.3.1) apply to tax transparency mandates as well.²⁰ In this vein, several authors point out that public tax disclosure requirements (particularly CbCR) are associated with proprietary costs (Devereux et al., 2011; Evers et al., 2017). The data to be published may reveal commercially sensitive information about the profitability of certain activities or locations of an MNE, which can attract competitors or trigger suppliers or customers to renegotiate the terms of their contracts. Competitive disadvantages are especially likely if not all companies are subject to a disclosure regime (Murphy, 2003; Spengel, 2018). In contrast, others claim that the tax disclosure requirements in question are not specific and granular enough to actually contain trade secrets (Cockfield & MacArthur, 2015; Morris, 2015). The notion that tax information is generally protected by tax secrecy laws in many countries and that disclosure rules may erode this principle (Lenter et al., 2003; Oats & Tuck, 2019) represents a tax-specific facet of the proprietary cost discussion.²¹ Like other corporate disclosures, tax transparency regimes can impose political costs on the affected companies in the form of increased regulatory scrutiny and adverse political actions (Leuz & Wysocki, 2016; Watts & Zimmerman, 1978). It is one of the goals of (both public and private) tax disclosure rules to inform legislators about necessary tax law adjustments.

Third, public tax disclosure requirements can expose companies to considerable reputational risks, such as public shaming of firms perceived as tax avoiders. Survey evidence suggests that reputational concerns play a decisive role in firms' tax planning decisions

²⁰ Litigation costs, however, are not supposed to play a major role in the context of tax disclosures.

²¹ It has to be noted that the primary intent of tax secrecy laws is to protect privacy rights of individuals (Cockfield & MacArthur, 2015). Thus, this issue is less relevant for corporate taxation, except for family-owned businesses.

(Graham et al., 2014). While some tax transparency regimes build upon this mechanism to reduce tax avoidance, unjustified accusations due to misinterpretation of the published data by non-experts can imply unintended adverse consequences (Lenter et al., 2003). The extent of reputational risks is likely to depend on a firms' business model and industry (i.e., exposure to consumers and demand elasticity, Cockfield & MacArthur, 2015).

Finally, tax disclosure mandates can cause adverse real effects. If the application is limited to specific locations or conditional on company size, firms will rationally try to avoid being subject to costly disclosures. This response can involve relocations and disincentives for economic growth (Devereux et al., 2011). However, circumventing disclosure is probably not possible (or in itself too costly) for most firms. Prior research has provided ample evidence that corporate investment and employment are sensitive to corporate taxation (Clifford, 2019; De Mooij & Ederveen, 2003; Feld & Heckemeyer, 2011; Giroud & Rauh, 2019). Moreover, opportunities to shift profits out of a high-tax country are positively associated with economic activity in this country (Overesch, 2009; Suárez Serrato, 2019).²² Hence, if disclosure requirements reduce profit shifting opportunities (or, more generally, tax avoidance), they may induce affected firms to relocate investments and employment to low-tax countries. In the same vein, Hanlon (2018) conjectures that firms subject to CbCR regimes might react by adjusting their distribution of real activities to prevent being perceived as tax aggressive and, at the same time, keep their tax burden constant.

Regarding the recipients, most academic literature discusses whether the proposed benefits of tax transparency regimes are likely to materialize. The main motivation, especially for private disclosures, is to provide tax authorities with information to enhance audit scrutiny and efficiency (Cockfield & MacArthur, 2015). However, as tax planning is mostly lawful, potential benefits are limited to identifying and scrutinizing tax avoidance cases in the “grey

²² Based on this notion, Dharmapala (2020) offers potential explanations why certain rules to prevent profit shifting are not applied more extensively by high-tax countries.

area” between legal and illegal measures (Spengel, 2018). Besides, several authors raise doubts regarding the information content of specific tax disclosures. Their criticism relates to the basic concept and lack of comparability of CbCR data (Devereux et al., 2011; Hanlon, 2018) as well as to the informative value of qualitative tax strategy disclosures (Oats & Tuck, 2019).

Apart from the tax administration, legislators are also supposed to profit from tax transparency regimes. They can utilize the information disclosed as a starting point to detect weaknesses of and develop necessary adjustments to tax law in order to restrict unintended tax planning possibilities. While private disclosures are generally sufficient for this purpose, a publication can help to hold legislators publicly accountable for taking necessary actions (Devereux et al., 2011; Lagarden et al., 2020). However, as the pervasiveness of legal tax planning opportunities is mainly due to a lack of international consensus and coordination, the actual benefit of more disclosures remains questionable.

Finally, proponents of public tax disclosure claim that such a disclosure enables the society to assess MNEs’ tax behavior. The argument implies that consumers can incorporate this information into their purchase decisions (Forstater, 2017). Against this backdrop, researchers have argued for years about whether the general public actually has the expertise to interpret the reports correctly or whether this concern is too “paternalistic” (Devereux et al., 2011; Lenter et al., 2003). While the public disclosure of previously confidential tax information could strengthen the perceived fairness and equality of the tax system, some authors question whether paying a “fair share” of taxes according to the perspective of the general public constitutes an appropriate benchmark for assessing tax liabilities (Lagarden et al., 2020).

The only kind of costs that recipients of tax disclosures face are the costs of processing the data. Ever-increasing amounts of available information can result in an information overload impairing the visibility of relevant details and ultimately reducing efficiency (Hanlon,

2018; Middleton & Muttonen, 2020). The tax authorities are probably especially susceptible to this problem as they receive the largest amount of tax-related information about firms.

Unsurprisingly, the conceptual literature arrives at mixed conclusions about whether tax transparency regimes will efficiently achieve their central purpose. Some authors are convinced that mandating tax disclosures will reduce tax avoidance and promote a better international alignment of taxable income and economic activities (Cockfield & MacArthur, 2015; Murphy, 2003). Others emphasize that the multitude of potential consequences and responses makes it hard to predict whether the benefits will materialize and outweigh the costs (Evers et al., 2017; Hanlon, 2018; Oats & Tuck, 2019). Public disclosure requirements are seen as especially critical. They come along with higher expected costs, while the intended effect of mitigating tax avoidance might as well be achieved by private disclosure mandates (Devereux et al., 2011). Some authors point out that a requirement to publish the information can even have detrimental effects, such as increased comparability with peer firms leading to even more tax aggressiveness (Devereux et al., 2011) or companies diluting the informativeness of their tax return data in light of a subsequent publication (Lenter et al., 2003). After all, questions on the informativeness of, responses to, and net benefits of the different tax disclosure mandates need to be answered by empirical research. We review extant evidence in Sections 2.5 and 2.6.

2.4 Determinants of Tax Disclosure Decisions

After having discussed the theoretical concepts of tax disclosure, we now turn to the review of the extant empirical literature on tax transparency. We start by assessing studies that investigate the determinants of corporate tax disclosure behavior in this section and continue with empirical studies on the informativeness of the disclosed data in Section 2.5. Finally, we review the empirical evidence on how firms and stakeholders respond to tax disclosure regulations and increased corporate transparency in Section 2.6. A condensed overview of the surveyed literature on tax transparency following this structure can be found in Appendix 2.

The overall level of tax disclosure of a firm depends on (1) mandatory reporting rules, (2) the discretion exercised under mandatory reporting regimes, and (3) the amount of voluntary disclosure. Empirical research on disclosure determinants focuses on the two latter aspects and analyzes the factors related to firms' discretionary or voluntary disclosure decisions. Owing to this research question, studies on the determinants of disclosure behavior are mainly based on public disclosures issued by the firms themselves. To survey this literature, we first describe firm attributes associated with firms' tax disclosure decisions, with a particular focus on the role of corporate tax planning.²³ Next, we outline how external pressure affects tax disclosure decisions and how firms behave when subject to various interacting reporting requirements. Given the proximity to disclosure research in related areas, we refer to findings from financial reporting and CSR literature where appropriate.

2.4.1 *Firm Characteristics and Activities*

2.4.1.1 *Generic Firm Attributes and Characteristics*

2.4.1.1.1 *Firm Size*

Among the various characteristics that influence firms' tax disclosure decisions, several studies have identified a positive association between firm size and the level of compliance

²³ We limit the discussion to selected firm attributes that we identified in the papers within our scope. Importantly, we require these attributes to be explained and interpreted in the respective papers.

with mandatory disclosure regulations. For instance, Belnap (2019a) finds that larger firms are more likely to comply with the UK requirement to disclose a tax strategy report mandated by the UK regulatory body and provide less boilerplate disclosures. The results confirm the expectation that large corporations are particularly sensitive to political and reputational costs due to their high visibility (Watts & Zimmerman, 1978).²⁴ In a German setting, Evers et al. (2014) find a positive association between firm size and disclosure quality of deferred taxes under German GAAP. Similarly, the results of L. A. Robinson and Schmidt (2013) imply that larger firms are more compliant with reporting requirements under FIN 48. However, the authors also document that larger firms reduce the overall clarity of their disclosure. This finding is consistent with other studies that identify a negative relation between size and disclosure choice in voluntary disclosure settings (e.g., N. Chen et al., 2019) or in settings where firms have certain latitude in determining how much information they actually provide (Akamah et al., 2018; Ayers et al., 2015; Krapat et al., 2016). One potential explanation for the mixed evidence could be that larger firms reduce overall disclosure quality to keep certain information private while technically complying with the reporting requirements (L. A. Robinson & Schmidt, 2013). Moreover, one should be aware that firm size captures different dimensions of firm characteristics (Healy & Palepu, 2001) such as operational complexity, which might create different disclosure incentives (N. Chen et al., 2019; Ehinger et al., 2020).

2.4.1.1.2 Corporate Governance

A large body of literature in accounting research examines agency conflicts in the context of corporate governance with fairly mixed results. While some studies support the notion that institutional investors lead to more disclosure due to tightened monitoring, other studies suggest that firms with large institutional ownership reduce voluntary disclosure to prevent information leakage to outside investors (for a thorough review of this literature, see Beyer et al., 2010).

²⁴ Similarly, studies on CSR disclosure typically report a positive association between firm size and disclosure quantity and quality (Christensen et al., 2019; Hardeck et al., 2019).

Evidence from the CSR literature implies that managers are more likely to issue CSR reports when firms have less concentrated ownership structures, which is consistent with the latter view (Christensen et al., 2019).

In the context of tax disclosure, empirical research on the effects of corporate governance mechanisms is relatively scarce. Ayers et al. (2015) predict and find a negative association between the share of institutional investors and voluntary disclosure of deferred taxes on permanently reinvested earnings. The authors argue that institutional owners prefer to keep their informational advantage over other stakeholders. However, N. Chen et al. (2019) do not observe a significant relationship between institutional ownership and voluntary ETR forecasts in conference calls. While differing agency issues in the setting of the two studies might explain the inconsistent findings, more research is needed to understand how governance structures and managerial incentive schemes influence disclosure decisions on tax-related items and whether agency concerns are comparable to other disclosure settings.

2.4.1.1.3 Information Environment

Corporate tax disclosure decisions are likely influenced by a firm's general level of transparency. In other words, transparent firms might be more inclined to provide additional information about their tax positions. Extant financial accounting literature mainly relies on analyst coverage as a proxy for the quality of firms' information environment.²⁵ However, empirical findings concerning tax disclosure decisions are relatively mixed. Some studies suggest that the number of analysts following is positively associated with voluntary tax disclosure in conference calls, in line with the expectation mentioned above (Balakrishnan et al., 2019; N. Chen et al., 2019). In contrast, other studies either document a negative relationship between analyst coverage and voluntary tax disclosure (Ehinger et al., 2020) or find no significant relationship at all (Ayers et al., 2015; Dyreng et al., 2020). The conflicting findings

²⁵ For a discussion of how corporate disclosure relates to analysts' behavior and outcomes, see Section 2.6.3.1.

cast some doubts on the interpretation of the measure as a proxy for the information environment.

Alternatively, analyst coverage might be viewed as a measure of the level of monitoring and scrutiny by the capital market (Dyreng et al., 2020). In a recent study, Mauler (2019) exploits the variation in analysts' issuance of tax forecasts to investigate the effects of analyst behavior on firms' disclosure decisions more explicitly. The author documents that firms disclose more information in their tax footnotes if analysts issue tax forecasts. Thus, the results suggest that firms respond to higher levels of scrutiny on their tax accounts by increasing their tax transparency.

2.4.1.1.4 Operating Industry

The operative environment is another factor that is likely correlated with the disclosure of tax-related information. Consistent with studies in financial accounting and CSR literature²⁶, the results confirm that the sensitivity regarding tax disclosure decisions varies across industries. For example, Gleason and Mills (2002) report that firms in litigious sectors are more likely to disclose material contingent tax liabilities related to the Internal Revenue Service (IRS) claims. Their evidence suggests that firms provide additional information by accruing tax losses when facing a higher risk of lawsuits. Other studies show that a firm's business model is associated with the level of tax transparency. For example, Bilicka et al. (2020) report in a supplemental test that firms operating in consumer-oriented industries voluntarily provide more qualitative information on their tax strategies, potentially due to greater stakeholder attention on tax issues. Examining the relation between geographic segment aggregation and firm characteristics, Akamah et al. (2018) also find that firms in retail, extractive, and in less competitive industries disclose, on average, more granular information about their geographic activities. However, these firms are incrementally more likely to aggregate geographic

²⁶ In line with the legitimacy theory, studies on CSR reporting show that firms operating in controversial industries, e.g., "sin industries", have higher quality CSR disclosures to legitimize their activities or to influence public opinion on the firm (Christensen et al., 2019).

segments when having at least one tax havens presence. Hence, revealing tax haven presences seems costly for these firms, although the benefits of concealing information about the geographic distribution of business activities likely differ across industries. While firms in the extractive industries might anticipate potential political costs, retail businesses are rather concerned about reputational effects in terms of consumer boycotts.

2.4.1.2 The Role of Tax Aggressiveness

One of the most frequently examined firm characteristics in the context of tax transparency is the level of tax planning. Note that we do not discuss the informativeness of tax-specific financial accounting items concerning the level of tax planning in this section.²⁷ Instead, we focus on studies that examine whether and how tax avoidance relates to individual disclosure decisions. One important caveat for the empirical analysis of the level of tax avoidance as a determinant of tax disclosure is the issue of endogeneity. In particular, the decision on both tax avoidance and disclosure behavior may be jointly determined by several firm-specific characteristics, some of which might be unobservable. Moreover, the level of tax avoidance is likely chosen in light of existing disclosure requirements, making it challenging to separate the two channels and draw causal inferences on the direction of causality. Therefore, most existing studies investigate associations between the decision to disclose certain tax-related information and a firm's level of tax avoidance.²⁸

2.4.1.2.1 Tax Avoidance and Mandatory Tax Disclosure

As discussed in Section 2.3, the disclosure of tax-related information could be costly for firms if this information can be linked to their overall tax position. In other words, the incentive to withhold information or to provide more opaque disclosures is stronger if firms expect the

²⁷ For a discussion of the informativeness of tax disclosure, see Section 2.5. We also refer the reader to the excellent review of Hanlon and Heitzman (2010) on the quality of frequently used tax avoidance measures, which is not within the scope of our survey.

²⁸ In their review on tax avoidance, Brühne and Jacob (2019) survey some studies that investigate the association between tax avoidance and firm transparency more broadly. According to their findings, most studies document a negative association between tax avoidance and firms' level of transparency, consistent with tax-avoiding firms being more opaque. Note, however, that we review studies that explicitly focus on tax-related disclosures.

disclosure to be informative for stakeholders like tax authorities, who might use the information when assessing the firms' tax liability.

The compliance with mandatory disclosure requirements regarding the information on international activities seems to be particularly sensitive to the level of corporate tax planning as the information indicates tax avoidance opportunities (e.g., Ayers et al., 2015) and presences in tax havens (e.g., Akamah et al., 2018; Hope et al., 2013). Gramlich and Whiteaker-Poe (2013) analyze Google's and Oracle's decision to drastically reduce the disclosure of material foreign subsidiaries in Exhibit 21 to their 10-K filings. The authors conclude that disclosing fewer subsidiaries is rational from a firm perspective, especially if these subsidiaries are located in tax havens. Building on these observations, Krapat et al. (2016) use a large sample of firms that substantially reduced their subsidiary disclosure and find that these firms report declining ETRs in subsequent periods relative to MNEs that did not change their disclosure behavior. The authors argue that reputational concerns and public scrutiny are the primary reasons for non-disclosure in Exhibit 21. The IRS already possesses detailed information about foreign activities due to confidential tax reporting requirements for US firms. The findings by Dyreng et al. (2020) corroborate this assertion. The authors compare the subsidiaries disclosed in Exhibit 21 to subsidiaries filed with the IRS and confirm that the propensity of non-disclosure in Exhibit 21 is higher for subsidiaries located in tax havens. Given that the IRS already receives the information through the tax returns, the authors conclude that firms attempt to obscure their tax planning activities from the public to avoid criticism. In sum, these studies imply that firms strategically decide not to comply with financial reporting regulations to obfuscate the regional distribution of their economic activities, presumably to avoid additional scrutiny and criticism by external stakeholders such as the media, consumers, or the general public.

Beyond geographic disclosure requirements, empirical evidence indicates a close link between firms' tax aggressiveness and the quality of mandatory disclosures. In their study on first-time FIN 48 disclosures, L. A. Robinson and Schmidt (2013) find that tax aggressive firms

provide lower quality disclosures both in terms of disclosure completeness (i.e., compliance) and clarity. Similarly, two recent studies analyze the textual attributes of tax-related qualitative disclosures. According to their results, tax aggressive firms make more boilerplate disclosures (Belnap, 2019a) and have more complex tax footnotes²⁹ in their financial statements (Inger et al., 2018). Furthermore, indirect evidence of low-quality tax disclosures by tax-avoiding firms is presented by Kubick et al. (2016). The authors document that firms with lower ETRs have a higher propensity of receiving tax-related SEC comment letters. The SEC issues such comment letters if it identifies material deficiencies in a firm's filings or if financial items require further clarification.³⁰ Thus, the receipt of a tax-related comment letter indicates the low quality of a firm's mandatory tax disclosure in its financial statements.

In aggregate, the evidence discussed so far is consistent with the expectation that tax-avoiding firms are less transparent. In particular, firms use discretion in financial reporting regulations to conceal information about their tax position or even omit required disclosure. Hence, regulators should reduce the room for interpretation in the respective rules and ensure that existing reporting requirements are properly enforced.

2.4.1.2.2 Tax Avoidance and Voluntary Tax Disclosure

Firms engage in corporate tax planning to benefit from future tax savings. At the same time, sophisticated tax arrangements could also increase the organizational (Blouin & Krull, 2018; Lewellen & Robinson, 2014) and the financial complexity of businesses (Balakrishnan et al., 2019). Related literature from financial accounting research shows that financial reporting complexity can impair a firm's information environment and increase information processing costs for users, which could, in turn, affect the firm's cost of capital (Lehavy et al., 2011; Miller, 2010; You & Zhang, 2009). Thus, firms could have an incentive to provide additional

²⁹ While the authors argue that managers intentionally reduce the readability of the tax footnotes, they cannot fully rule out that the lower readability might be due complex tax planning structures, which are by nature hard to describe.

³⁰ For more information, see <https://www.sec.gov/fast-answers/answerscommentletters> (accessed on September 16, 2022).

disclosures to resolve uncertainty around financial reporting items and mitigate the adverse consequences of (tax) reporting complexity (e.g., Guay et al., 2016). Tax complexity refers to specific income tax components (e.g., permanent BTDs) and characteristics (e.g., ETR volatility), which are difficult to interpret for financial statement users and which make it difficult to predict income tax cash flows for future periods accurately (e.g., Bratten et al., 2017). In fact, recent empirical studies find that firms discuss income tax-related topics more frequently in conference calls when tax reporting complexity is higher (N. Chen et al., 2019; Ehinger et al., 2020; Koutney, 2019). Similarly, Flagmeier and Müller (2017) show that firms issue more comprehensive information about tax-loss carry-forwards when the usability of the losses is less certain.

Other studies analyze the effects of tax aggressiveness on voluntary tax disclosure behavior more directly. Early evidence is provided by Schwab (2009), who shows that earnings announcements that include voluntary information on BTDs are more likely for firms with a higher level of tax avoidance, which is a potential source for large BTDs. Consistent with the prediction that tax aggressive firms have a weaker information environment, Balakrishnan et al. (2019) find that analyst forecast errors and information asymmetries are higher for tax-avoiding firms. In further analysis, the authors show that firms with a low ETR disclose more detailed MD&A sections and provide more tax-related discussions in conference calls, potentially indicating that firms attempt to mitigate transparency concerns or complexity by issuing clarifying information.

Overall, and in line with theoretical predictions, the empirical evidence suggests that managers face conflicting incentives with respect to the optimal level of transparency. On the one hand, supplemental disclosure could facilitate the interpretation of tax-related financial items for capital market participants and mitigate potential agency costs associated with the concern that managers might derive private benefits from tax avoidance. On the other hand, the information could also be accessed by tax authorities to target future audits.

Ehinger et al. (2020) assess the relative importance of both channels and find that the risk of being audited by the IRS attenuates the positive effect of tax complexity on voluntary disclosure of changes in taxes or forward-looking tax information. Nevertheless, more research is necessary to understand better which factors (complexity, public scrutiny, or audit probability) drive the cost-benefit considerations and under which conditions firms are willing to provide additional information.

2.4.1.2.3 Tax Avoidance and CSR Reporting

As income taxes and corporate tax strategies are gradually recognized as an integral part of CSR disclosures (e.g., GSSB, 2019b, see Section 2.3.2), a developing stream of literature at the intersection of CSR and tax research investigates whether corporate tax behavior is associated with the inclusion of tax-related information in CSR reports. Based on a case study of a Finnish MNE, Ylönen and Laine (2015) provide illustrative insights on how an MNE's commitment to sustainability and an open discussion with stakeholders in CSR disclosures conflicts with its actual approach to tax. In particular, the company provided very sparse information on taxation and tax planning in its renowned CSR reports despite claiming transparent communication. Moreover, the authors show that the company heavily engaged in tax avoidance via intra-group transfer pricing using a Dutch holding company.

However, the results of more recent studies with larger samples provide a different perspective in line with the legitimacy theory. That is, tax-avoiding firms are more likely to include tax-related information in their CSR disclosure to legitimize their tax strategies or to alleviate political and societal pressure for not paying their "fair share" of taxes (Hardeck & Kirn, 2016; Kao, 2019). Regarding the content, early evidence indicates that tax-avoiding firms provide more soft information such as a general commitment to a socially responsible approach to tax that is hard to verify (Hardeck & Kirn, 2016; Kao, 2019). Besides, tax aggressive firms are less likely to mention compliance aspects in their CSR reports (Hardeck et al., 2019). In a cross-country study on tax disclosure in CSR reports, Hardeck et al. (2019) show that country-

level variation in cultural dimensions partly explains whether firms discuss taxes in CSR reports. Moreover, cultural dimensions are associated with differing views about tax payments and CSR expressed by the firms. For instance, firms in countries characterized by higher masculinity are more likely to view taxes and CSR as substitutes rather than complements.

Based on these first insights, future research should further investigate what firms actually disclose in CSR reports and whether the information is incrementally useful to readers of the reports compared to the information provided in financial statement disclosures. Given that public CbCR and qualitative tax strategy reports become a mandatory element of CSR disclosures for firms following the GRI reporting framework, the relationship between CSR disclosure and tax behavior continues to be a promising area for future research.

2.4.2 *External Pressure*

In recent years, corporate tax planning activities have moved into the focus of attention of the media (e.g., S. Chen et al., 2019) and NGOs. The latter attempt to exert public pressure on firms by uncovering tax planning arrangements and disclosure deficiencies associated with tax avoidance. The political and reputational costs argument predicts that unintended scrutiny and public pressure by external stakeholders constitute relevant criteria for a firm's disclosure decisions.³¹ Empirical evidence confirms the relation between tax disclosure behavior and public scrutiny. For instance, Dyreng et al. (2020) report that media coverage is unrelated to the disclosure of non-tax haven subsidiaries but negatively associated with the disclosure of significant tax haven presences. The authors conclude that firms strategically omit tax haven subsidiaries that could be picked up by the media to avoid unintended scrutiny. In an earlier study, Dyreng et al. (2016) exploit a unique setting to investigate corporate disclosure responses to public pressure levied by an NGO on large UK firms that did not comply with a mandatory regulation to disclose all foreign subsidiaries. The authors find that initially non-compliant

³¹ Apart from changes in disclosure behavior, external pressure might also induce changes in corporate tax avoidance as well as real effects. We review the literature on corporate responses to increased transparency in Section 2.6.1.

firms immediately increased their disclosure. Among the newly disclosed subsidiaries, the fraction of tax haven locations was disproportionally higher, which suggests that firms previously intended to hide this information.

The results concerning media attention and public scrutiny should be interpreted with some caution as media attention and public scrutiny are not randomly assigned. Since journalists aim to generate attention among readers, they are more likely to choose controversial topics such as corporate tax avoidance (Jensen, 1979),³² which introduces a selection bias in the examined samples. A notable exemption is a study of Belnap (2019a), who conducts a field experiment to test the effect of public scrutiny on firm disclosure behavior. His results indicate that treated firms start to comply with mandatory disclosure requirements. Moreover, previously compliant firms slightly improve the quality of their disclosure. One explanation to reconcile the differing findings is that firms disclose less ex-ante to reduce costly public scrutiny. However, sufficiently large shocks in public scrutiny (e.g., caused by intense media coverage or public “shaming” campaigns) may alter the disclosure equilibrium for firms, especially for firms that violate mandatory regulations (Belnap, 2019a). This ex-post disclosure behavior would be consistent with socio-political theories (e.g., firms increasing disclosure to satisfy the demand by outside stakeholders, see also Section 2.3.3.1).

Another piece of evidence on the effect of external pressure on disclosure is presented by Kubick et al. (2016). The authors document that firms increase the length of tax footnotes and the number of references to taxation in the MD&A section of their reports after receiving a tax-related SEC comment letter. These results complement prior findings in accounting literature on the effect of regulatory scrutiny (S. V. Brown et al., 2018; J. R. Robinson et al., 2011).

³² This prediction is supported by S. Chen et al. (2019), who find that firm visibility and level of tax avoidance are relevant determinants of media coverage.

2.4.3 *Interaction Between Different Disclosure Types*

Firms are subject to various tax reporting regulations and disclosure regimes, as we have documented in Section 2.2.2. Importantly, each set of disclosure creates specific reporting incentives for firms depending on the addressee of the information (e.g., investors, the general public, tax authorities). However, the information required by different regulations could be interrelated to a certain extent. This is most obvious for the relationship between financial reporting standards and confidential tax reporting to tax authorities. Firms may alter their disclosure behavior to the extent to which these two sets of disclosure interact with each other (Hope et al., 2013).

A particularly well-studied example is the introduction of Schedule UTP, which requires US firms to confidentially provide the IRS with additional information about the UTBs recorded in their public financial statements. The UTBs are reserves for the firm's uncertain tax positions, which might be subject to adjustments during tax audits. The reserves are disclosed on aggregate across jurisdictions, and firms are not required to specify the positions underlying the total amount. Schedule UTP obliges firms to report a narrative description of the components of UTBs that relate to tax positions taken in the federal tax return in the US. The regulation increases overall tax transparency as it provides the IRS with previously unavailable information allowing for more detailed analyses of uncertain tax positions. Notably, the Schedule UTP setting is unique because the extent of private disclosure depends on firms' financial reporting decisions regarding the amount of UTBs.

Empirical studies document robust evidence that firms respond to Schedule UTP's introduction by reducing financial reporting reserves for UTBs without changing their underlying tax behavior (Abernathy et al., 2013; Honaker & Sharma, 2017; Towery, 2017). Exploiting confidential tax return data, Towery (2017) shows that firms strategically reduce the amount of reported UTBs. Still, they do not seem to claim fewer income tax benefits in corporate tax returns. In contrast to prior studies, Bozanic et al. (2017) analyze how firms

modify their narrative disclosures in financial statements following Schedule UTP. The authors show that affected firms increase the length of tax footnotes. Moreover, firms seem to discuss topics that relate to UTBs after the imposition of the confidential reporting requirement. These findings indicate that firms increase voluntary public disclosure, but they also suggest a disconnect between qualitative and quantitative disclosure responses. One potential reason for the conflicting results might be that firms try to mitigate the costs associated with the disclosure to the IRS by reducing the amount of UTBs in their financial statements. For the remaining fraction of UTBs, however, the cost-benefit tradeoff has likely changed, which could induce voluntary qualitative disclosure in the footnotes to explain the uncertain tax positions to investors.

Apart from the studies on Schedule UTP, little attention has been paid to the interaction of different disclosure types. A notable exception is a study of Kays (2019), who investigates voluntary tax disclosure responses to the mandatory disclosure of tax return data by a third party, namely the Australian Taxation Office (ATO). The author argues that large deviations between tax return income and financial statement income may increase uncertainty about firms' future cash flows among investors. Consistent with her expectation, she documents that firms with larger deviations are more likely to issue supplemental information with reference to the ATO's publication. These results imply that the third-party disclosure increased the benefits of additional voluntary disclosure.

In a recent study, R. J. Brown et al. (2019) examine whether the mandatory disclosure of public CbCR for EU banks alters the disclosure incentives under geographic segment reporting. As the public CbCR contains very granular country-level information about bank's operations for every country, its introduction likely reduces the proprietary or political costs associated with segment reporting. However, R. J. Brown et al. (2019) fail to find a significant change in banks' segment reporting after the CbCR adoption. Given that the CbCR for banks is publicly

available for all interested stakeholders anyway,³³ adjusting segment reports may involve unnecessary direct preparation costs, which could explain this result. However, the recent introduction of a private CbCR in OECD and EU countries may provide a more promising setting to assess public tax disclosure responses.

2.4.4 *Interim Conclusion*

Research on the determinants of corporate tax disclosure decisions shows that firms consider several factors when they trade off the costs and benefits associated with the disclosure of tax-related information. Moreover, the evidence presented above suggests that the disclosure decision is highly firm- and context-specific. For instance, tax-avoiding firms strategically deviate from mandatory disclosure requirements to obfuscate tax-related information. Still, they are more likely to issue supplemental (often qualitative) information to reduce complexity or legitimize their tax arrangements. This disclosure behavior is noteworthy and questions whether additional tax transparency regulations may be justifiable. Instead, the studies on subsidiary disclosures show that proper enforcement of existing reporting regulations is crucial. However, from an academic perspective, we still lack comprehensive empirical evidence on the relative importance of the different channels affecting disclosure decisions. In many studies, the single channels are only indirectly observable, or they are tested in isolation. Given the increasing number of disclosure requirements for firms, it might be promising to assess how the interaction between different disclosure rules affects public tax disclosure decisions.

2.5 Information of Tax Disclosures

Having examined the determinants of firms' voluntary and discretionary tax disclosure decisions, we next survey studies that empirically analyze the informativeness of the data disclosed. We define informativeness as the extent to which the respective disclosures increase

³³ Banks are required to publish the audited report as an annex to the (consolidated) financial statements (Article 89 of Directive 2013/36/EU, hereinafter referred to as the Capital Requirements Directive (CRD) IV; see also Section I.B of Appendix 1).

the recipients' level of knowledge about the firm, its financial performance, and, importantly, its tax behavior. The degree of informativeness hinges on both the conceptual design of the underlying tax transparency rules and frameworks (including the leeway offered by explicit or implicit reporting choices) and on firms' disclosure decisions (which we take as given in this section). According to the type of information, we distinguish between studies on quantitative disclosures (Section 2.5.1) and research on qualitative disclosures (Section 2.5.2).

2.5.1 Quantitative Tax Disclosure

2.5.1.1 Tax Disclosures in Financial Statements

While our study is clearly focused on information about a firm's approach to tax and level of tax avoidance, tax disclosures in financial statements can as well contain economic information about firm performance, which has been investigated by several studies evolving in the 2000s. Hanlon and Heitzman (2010) and Graham et al. (2012) comprehensively review this stream of accounting research and summarize two main findings. First, since taxable income constitutes an alternative (often more cash-flow oriented) profit measure, tax disclosures comprise incremental information about a firm's current and future earnings. Extant evidence suggests that temporary BTDs are informative about earnings persistence and that total BTDs are positively associated with future earnings growth. Second, managers use the tax accounts in general – and in particular, the valuation allowance to deferred tax assets and permanently reinvested earnings – to manage earnings to meet or beat analysts' forecasts, but not to achieve other earnings targets. While the tax contingency reserve has also been employed for earnings management, there is conflicting evidence whether this still holds true after the introduction of FIN 48 (Cazier et al., 2015; Gupta et al., 2016).

Research on the informativeness regarding a firm's tax behavior started with two early studies discussing what the financial statements of US companies tell about US taxable income and actual US income tax payments. Hanlon (2003) conceptually explains how items like the tax contingency reserve or tax credits and different consolidation rules for book and tax

purposes impede the calculation of US taxable income based on current tax expense. McGill and Outslay (2004) illustrate these difficulties in case studies. A first large-sample examination is provided by Lisowsky (2009). Combining confidential tax return data from the IRS with information from Compustat, he builds a model that infers a firm's US tax liability from all tax disclosures in its public financial statements. He documents a robust positive relationship between tax expense and actual tax payments indicated in the tax return. In particular, he finds that one dollar of current federal tax expense recorded in financial statements is associated with about 70 cents total tax reported to the IRS. Besides, Lisowsky (2009) identifies additional tax disclosure items which help (e.g., change in the tax contingency reserve, cash taxes paid) or do not help (e.g., deferred taxes) to estimate US total tax. In summary, as tax disclosures in financial statements are primarily designed to provide a fair presentation of a firm's tax burden from an accounting perspective, they do not facilitate a precise calculation of taxable income or tax liabilities in the home country (Hanlon, 2003). Nevertheless, they allow for a good approximation.

The growing interest in research on the tax planning behavior of MNEs has spurred the need for suitable measures of tax avoidance on firm-level. As the access to confidential tax authority data is rare, researchers have developed a series of measures based on the publicly available tax disclosures in consolidated financial statements. This includes different versions of the ETR (GAAP vs. cash ETR, annual vs. long-run), variations of BTD measures (temporary and total BTDs, abnormal BTDs, discretionary permanent BTDs), and the tax contingency reserve (especially after the introduction of FIN 48). Hanlon and Heitzman (2010) provide a detailed overview and illustrate for each measure which forms of tax avoidance it captures.³⁴ They also highlight the importance of selecting a proxy which fits the research question.

³⁴ As Hanlon and Heitzman (2010) note, it is important to consider the variety of tax planning activities. For example, conforming tax avoidance never results in a difference between financial and tax accounts, deferral strategies create temporary differences, and some other kinds of non-conforming tax avoidance give rise to permanent differences. Consequently, every measure includes only some forms of tax avoidance while excluding others.

A handful of studies try to test the validity of specific proxies by using additional information on companies' tax avoidance behavior from other sources as a benchmark. An early analysis of Mills (1998) shows that temporary BTDs are associated with proposed IRS audit adjustments. Other authors rely on samples of US firms allegedly engaging in tax sheltering. The term "tax shelter" refers to a very aggressive form of transactions whose main benefit is reducing the tax burden. While complying with the letter of material tax law, the IRS – based on case law – may deny the legality if a transaction lacks economic substance. Such cases often end up in court, and Graham and Tucker (2006) use public tax court records and financial news to identify firms accused of engaging in tax shelters. Desai and Dharmapala (2009), Frank et al. (2009), and Wilson (2009) build upon this approach and document that their BTD measures are associated with the incidence of tax sheltering accusations. Lisowsky (2010) instead exploits confidential information on tax sheltering cases obtained by the IRS' Office of Tax Shelter Analysis (OTSA).³⁵ He finds that total BTDs and the tax contingency reserve (prior to FIN 48) are related to tax shelter engagement, while the long-run cash ETR and Frank et al.'s (2009) measure of discretionary permanent BTDs are not. Finally, Lisowsky et al. (2013) again use a confidential OTSA dataset and show that the UTBs to be disclosed after the introduction of FIN 48 are a strong predictor of tax shelter participation and outperform all other conventional measures of tax avoidance.

Apart from their conflicting results, studies correlating different tax avoidance proxies with tax sheltering incidence need to be interpreted with caution. First, the tax shelter datasets suffer from selection bias, as they only include firms that were discovered or actively disclosed to the tax authorities (Hanlon & Heitzman, 2010). Second, as a transaction-based indicator, tax shelter participation is not necessarily informative about a firm's overall level of tax avoidance.

³⁵ The sample used by Lisowsky (2010) comprises the years 2000-2004. In this period, the OTSA obtained its information on tax shelter participation through enforcement actions or voluntary disclosures by firms. In contrast, the OTSA dataset for the years 2006-2009 exploited by the subsequent study of Lisowsky et al. (2013) is based on firms' mandatory disclosures of reportable transactions (Form 8886). See Section III.B of Appendix 1 for more details on this private disclosure requirement.

Firms with sufficient opportunities to engage in less risky tax planning strategies might abstain from aggressive tax shelters (Hanlon & Heitzman, 2010). Thus, a significant association with tax sheltering does not qualify a measure as a universal proxy for tax avoidance.

While UTBs have become a popular measure for (risky) tax avoidance due to their conception as reflecting controversial tax positions, a study of L. A. Robinson et al. (2016) casts some doubt on their informativeness. Firms appear to be over-reserved, as only 24% of the UTBs unwind due to settlements with tax authorities within three years. Using confidential IRS data, L. A. Robinson et al. (2016) document that ETRs decrease in the periods of settlements, implying that the initial reserves exceed the actual amount of cash settlements. This tendency to overstate reserves may be inherent in the recognition and measurement criteria of FIN 48 since they require firms to assume that all relevant positions will be detected by a tax audit.³⁶ Consequently, although UTBs may serve to identify certain forms of tax avoidance, their informative value regarding future cash tax payments arising from risky positions seems to be restricted.

In summary, it has to be noted that all the different proxies for tax avoidance based on tax items in consolidated financial statements reflect only certain forms of tax avoidance while excluding others. Attempts to empirically validate these proxies can provide only limited evidence as tax planning decisions are unobservable. In addition, measures based on financial accounting numbers may be distorted by aggressive financial reporting decisions and by firms using tax accounts for earnings management purposes (Hanlon & Heitzman, 2010).

³⁶ It has to be noted, though, that several studies document a systematic decrease of the UTB amounts recorded in firms' financial statements following the introduction of the related confidential disclosure requirements of Schedule UTP (see the review of this literature in Section 2.4.3). However, this finding does not necessarily imply that the newly disclosed amounts of UTBs are more informative compared to UTB amounts prior to Schedule UTP as the reduction seems to be driven by firms trying to minimize the positions they would need to explain in Schedule UTP.

2.5.1.2 *Country-by-Country Reporting*

While financial reporting standards are mainly designed to provide investors with information on firm performance, virtually all other types of tax disclosure rules under the scope of our review serve the primary goal of informing tax authorities or other stakeholders about corporate tax behavior. In recent years, we have seen a remarkably rapid growth in studies, which exploit the data resulting from different CbCR requirements. By construction, Country-by-Country (CbC) reports shall enable their readers to assess whether the profits allocated to and taxes paid in each country by an MNE are in line with the distribution of economic activity. In other words, CbCR is supposed to indicate international profit shifting, a particular (and very important) form of tax avoidance. To assess the incremental informativeness of the reports in this regard, we provide a very brief summary of how prior research has studied profit shifting.³⁷

Profit shifting denotes the artificial relocation of taxable profits from high-tax to low-tax countries, e.g., by transfer pricing, licensing of intangibles, or intra-group financing (Heckemeyer & Overesch, 2017). As the amount of shifted profits is not directly observable, researchers rely on indirect approaches to detect and measure profit shifting (Dyreneg & Hanlon, 2019). A widely-used approach³⁸ developed by Hines and Rice (1994) models the pre-tax income reported by an affiliate of an MNE in a particular country as the sum of “true” profits (explained by economic input factors) and shifted profits (induced by tax incentives). The tax incentive is usually formalized as the difference between the host country’s statutory tax rate and a group average.³⁹ In the standard log-linear regression specification, the coefficient on the tax incentive variable can be interpreted as the tax semi-elasticity of reported profits.

³⁷ For a comprehensive review of the profit shifting literature, we refer the reader to Dharmapala (2014), Dharmapala (2020), Dyreneg and Hanlon (2019) and Riedel (2018).

³⁸ Other approaches, for example, exploit earnings shocks (Dharmapala & Riedel, 2013) or compare reported labor productivities of MNEs with those of domestic firms (Tørsløv et al., 2020).

³⁹ The composite tax index developed by Huizinga and Laeven (2008) basically represents the difference between the host country tax rate and a weighted group average. Alternative tax incentive proxies include the host country statutory tax rate or measures of the ETR and ETR differences.

A multitude of different data sources have been employed so far to examine profit shifting. While virtually all studies suggest that MNEs engage in profit shifting to some extent (Dyreng & Hanlon, 2019), estimates of the size of this phenomenon vary considerably across different datasets. Several researchers rely on macro-level information, such as data on foreign operations of US firms from the Bureau of Economic Analysis (BEA) (Hines & Rice, 1994) or new datasets of international foreign affiliate statistics (Tørsløv et al., 2020). These studies typically find rather large amounts of profit shifting, with tax semi-elasticities around -3 (Clausing, 2016; Hines & Rice, 1994) or about 40% of MNEs' foreign profits being shifted to tax havens (Tørsløv et al., 2020). In contrast, other authors exploit micro-level datasets, especially information from unconsolidated financial statements of subsidiaries provided by Bureau van Dijk (BvD) databases. Most micro-level studies document only modest results with tax semi-elasticities around -1 (Dharmapala & Riedel, 2013; Huizinga & Laeven, 2008).⁴⁰ Meta-regression analyses by Heckemeyer and Overesch (2017) and Beer et al. (2020) also confirm that the aggregate datasets tend to produce much stronger results. This finding has raised the question of how the discrepancy can be explained.

Critics of micro-level datasets point out that BvD data mostly lack observations from tax havens that are probably the most relevant locations for profit shifting (Clausing, 2020a; Dyreng & Hanlon, 2019). In this vein, the findings of Dowd et al. (2017) suggest that MNEs' tax responsiveness is non-linear and that elasticities are highest with regard to low-tax countries. Furthermore, micro-level studies usually treat each company observation equally, while only a few very large companies might be responsible for a vast majority of total profit shifting (Clausing, 2020a). On the other hand, the aggregate structure of macro-level datasets does not allow to control for affiliate fixed effects, resulting in an over-estimation of profit shifting as noted by Dharmapala (2020). More importantly, a recent working paper by Blouin

⁴⁰ However, a micro-level study on a sample of banks using Bankscope data documents a tax semi-elasticity of -2.4, suggesting that banks are more tax-sensitive than firms from other industries (Merz & Overesch, 2016).

and Robinson (2020) claims that the aggregate BEA data, as used by prior research, suffer from a severe double counting and/or misallocation of profits. They propose a way to correct this error, which drastically reduces the estimates of profit shifting. Blouin and Robinson (2020) also discuss potential double counting and misallocation problems of several other data sources.

Considering all the drawbacks of conventional datasets, it seems appealing to examine whether new information from CbCR may serve as a preferable source to investigate profit shifting (Dyreng & Hanlon, 2019). The first setting where CbCR data have become available for research is the public CbCR requirement for EU financial institutions, which was introduced for financial years 2014 onwards.⁴¹ Several studies analyze hand-collected reports of different samples of European bank groups. Descriptive evidence suggests that tax havens play an important role for these firms, accounting for nearly one-fifth of their total worldwide profits (R. J. Brown et al., 2019; Dutt, Nicolay, et al., 2019; Janský, forthcoming). However, only certain tax havens (in particular, Luxembourg, Hong Kong, Ireland, and Singapore) are used frequently, while the presences and profits disclosed in some other haven countries are negligible (R. J. Brown et al., 2019; Dutt, Nicolay, et al., 2019; Janský, forthcoming). The reports also reveal a considerable disconnect between reported profits and real activity. Relatedly, the profit per employee and the profit margin in tax havens is a multiple of the values in non-haven countries (R. J. Brown et al., 2019; Dutt, Nicolay, et al., 2019; Fatica & Gregori, 2020). Bouvatier et al. (2018) estimate a gravity model based on CbCR data to analyze the location decisions of EU bank groups. They find that tax havens attract about 200% additional turnover and nearly 160% additional employment beyond what can be explained by standard gravity factors, with German and UK-based bank groups exhibiting the most pronounced results.

⁴¹ See Section 2.2.2.1 and Section I.B of Appendix 1 for further details.

Two studies apply the standard approach developed by Hines and Rice (1994) to banks' CbCR data (Dutt, Nicolay, et al., 2019; Fatica & Gregori, 2020). Both face the challenge that banks' CbC reports do not contain an appropriate control variable for capital input (such as tangible or total assets). Still, they differ in terms of sample selection, the primary tax incentive variable, country-level controls, and fixed effect structure. Fatica and Gregori (2020) find an average tax semi-elasticity of -2.5, which is close to the results of prior research on banks using BvD data (Merz & Overesch, 2016). However, consistent with Dowd et al. (2017), they also observe that the responsiveness is much stronger with respect to tax haven locations. In contrast, Dutt, Nicolay, et al. (2019) document that the absence of a control variable for capital input severely biases the estimates against finding evidence of profit shifting. Based on a simplified correction for the bias's presumed size, they arrive at an average tax semi-elasticity of -4.6.

In order to evaluate the incremental information revealed by the CbCR data, Dutt, Nicolay, et al. (2019) directly compare their dataset with the information contained in the BvD databases Orbis and Bank Focus for an identical sample of bank groups. They show that the commercial databases exhibit a good coverage of the group structure but lack financial statement information for a large fraction of subsidiaries (especially of those in tax havens). The CbCR data uncover this information. However, the advantage in terms of coverage is counteracted by the limited set of variables on economic activity to be reported in banks' CbC reports, casting doubt on whether this disclosure enables more precise estimations of the extent of profit shifting.

Although the CbCR framework proposed by the OECD stipulates only private disclosure to tax authorities,⁴² the IRS has recently published the first aggregate data of US-based MNEs for 2016 and 2017.⁴³ This CbCR framework comprises more variables due to its confidential

⁴² See Section 2.2.2.2 and Section III.A of Appendix 1 for more details.

⁴³ Available at <https://www.irs.gov/statistics/soi-tax-stats-country-by-country-report> (accessed on June 15, 2020). The data for 2016 are mainly based on voluntary reports, the data for 2017 represent the first full year of mandatory reports.

nature, including tangible assets as a potential proxy for capital input. A few studies use the first wave of data published by the IRS and examine their advantages and problems. In terms of coverage, these studies document that the IRS data are clearly superior to Orbis (Garcia-Bernardo et al., 2019) and even contain information on more than twice as many countries as the public BEA data series (Clausing, 2020a; Garcia-Bernardo et al., 2019). Concerning the double counting issue, CbCR does not suffer from the problems inherent in the BEA data as the method of profit allocation differs (Blouin & Robinson, 2020). Researchers discuss some other potential sources of double counting due to intra-group dividends and the position of “stateless income”⁴⁴ in the US reports. However, first quantitative analyses show that, after correcting for stateless income, aggregate profits from the IRS CbCR dataset only slightly exceed the benchmarks of corrected BEA profits and aggregate financial statements profits from Compustat (Blouin & Robinson, 2020; Clausing, 2020a; Horst & Curatolo, 2020).

In light of these advantages, Clausing (2020a) uses the IRS CbCR data for 2017 as an alternative source to quantify profit shifting of multinational firms headquartered in the US. Depending on the method applied, she estimates that the US has lost corporate tax revenues of USD 91-134 billion (i.e., about 30-45% of its total corporate income tax revenues) in 2017, which is in the range of the large amounts of profit shifting documented by prior studies using aggregate datasets. However, these results need to be interpreted with caution. Other researchers assess such numbers as implausibly high (Dyreng & Hanlon, 2019) and question the assumptions underlying the calculations (Blouin & Robinson, 2020). Besides, the IRS CbCR dataset is very new and, so far, offers only one full year of mandatory reports.

⁴⁴ Owing to the US tax system and the US CbCR implementation, the income of conduit entities such as partnerships needs to be disclosed as “stateless income”. When both a partnership and its partner have to file a CbCR, the income labelled as stateless is recorded twice in the aggregate CbCR dataset (Blouin & Robinson, 2020). To avoid this problem, Clausing (2020a) eliminates the position of stateless income from the dataset.

In summary, first evidence suggests that different kinds of CbCR datasets – which will increasingly become available in the future⁴⁵ – can provide additional information on MNEs' profit shifting behavior due to several advantageous features. If available on firm-level, CbCR disclosures contain disaggregated information, allowing researchers to control for group- and affiliate-specific factors. Simultaneously, CbCR offers a more complete country coverage, including all tax havens, which is superior to unconsolidated financial statements from the BvD databases and more comprehensive than the public BEA data series. Finally, CbCR is less prone (albeit not immune) to double counting or misallocation of profits than BEA data or international foreign affiliate statistics.

Nevertheless, several caveats should be noted when using CbCR information to examine profit shifting. First, companies do not have to report the data on the subsidiary level but on the country level, which already implies a certain degree of aggregation. Second, the multilateral CbCR regulations contain several explicit choices, and, in addition, their wording leaves a certain scope for interpretation. For example, the OECD (2015) framework allows for a wide range of sources to compile the reports, including financial statements, regulatory filings, and even managerial accounting. Similarly, the EU requirement for banks lacks a clear definition of the items to be reported and the applicable consolidation scope. The resulting leeway likely causes differences in national implementation and companies' reporting practices, impeding the comparability of the data. Since extant studies have not addressed this issue, more research on potential heterogeneity within CbCR datasets is warranted.

Third, when relying on CbCR data, researchers are confined to a limited selection of variables. While this drawback is especially pronounced for the CbCR of European banks (lacking a capital input proxy), even the OECD's confidential CbCR does neither include labor

⁴⁵ The OECD (2020a) has just recently published aggregate international CbCR information, the IRS will probably publish further years of data, researchers might occasionally be granted access to tax authorities' confidential CbCR datasets, and the EU is still discussing about a general public CbCR requirement for large MNEs.

costs nor any direct indicators reflecting intra-group financing or licensing of intangibles. Forth, even if firms had to report all these items, it should be noted that information on the distribution of several economic input factors per se does not imply a universal formula or benchmark for a “fair” allocation of profits (Lagarden et al., 2020). Finally, since CbCR is generally based on accounting information, the profits disclosed per country do not necessarily correspond to the international allocation of taxable income. A recent study of Bilicka (2019) shows that foreign MNEs increasingly report zero taxable income but, simultaneously, positive accounting profits in the UK (as a high-tax country). Like other accounting-based measures, CbCR cannot capture such non-conforming tax planning activities. In light of these caveats, CbCR datasets likely constitute an additional piece in the puzzle, rather than revealing the whole picture of MNEs’ profit shifting behavior.

2.5.2 *Qualitative Tax Disclosures*

In light of the limitations of quantitative disclosures and due to the advance of textual analysis techniques, research has recently started examining qualitative tax disclosures as an additional source of information on tax behavior. For example, Campbell et al. (2019) analyze tax-related risk factor disclosures of public US firms. As of 2005, the SEC requires firms to discuss significant risk factors in their 10-K filings (Item 1A). Campbell et al. (2019) measure the extent of firms’ tax-related risk factor disclosures and find a negative association with future cash tax payments. They conclude that the tax risks discussed by managers reflect positions of reasonable risk-taking (i.e., which are value-increasing as they result in positive future net cash flows).

The trend towards more tax transparency has also entailed new qualitative disclosures, such as the tax strategy reports to be published by certain firms with a presence in the UK.⁴⁶ This requirement appears to be particularly interesting from a research perspective. As opposed

⁴⁶ See Section 2.2.2.1 and Section I.C of Appendix 1 for more information.

to financial statements and CbCR disclosures, it demands that firms state explicit information on their attitude towards tax planning. Bilicka et al. (2020) examine the content of about 260 reports published by MNEs headquartered in the UK. They conduct natural language processing analyses based on plagiarism software to identify common phrases across the different documents. The results indicate a modest degree of overall resemblance, with an average value of the highest similarity level across reports of about 8%. Moreover, about 6% of the analyzed publications exhibit a similarity level exceeding 30%, which they label as “boilerplate” disclosures. In a study prepared for Tax Justice Network, Belnap (2019b) applies corresponding techniques to around 600 reports of US-based MNEs subject to the UK regulation. In contrast to Bilicka et al. (2020), he finds an average similarity level of 30%. He also highlights a striking example of two very large US companies whose reports are 86% alike. Since the documented similarity is not driven by firms operating in the same industries, he infers that firms either copy from each other or external advisors jointly provide those standard phrases. While the overall results of Belnap (2019b) and Bilicka et al. (2020) differ, both studies indicate that the tax strategy reports of at least some firms may be rather uninformative about their tax planning behavior. Due to the qualitative nature of this disclosure type, firms have considerable leeway to influence its informativeness. The potential determinants of such disclosure decisions have been examined in Section 2.4.

2.5.3 *Interim Conclusion*

Research on how informative (public) disclosures are about a firm’s tax behavior is focused mainly on quantitative disclosures. A well-established strand of the literature develops and tests a group of tax avoidance measures calculated from financial statement items. More recently, authors have started to exploit the first available CbCR datasets and assess their information content regarding profit shifting. While all these studies provide an important basis for research on the factors associated with tax avoidance, they face the problem that tax planning decisions and profit shifting actions per se are unobservable. Thus, there is no reliable

benchmark to validate the suitability of these measures and datasets. As a complementary source of information, researchers increasingly examine qualitative tax disclosures (such as risk factor disclosures and tax strategy reports). Still, the first results suggest that some firms might reduce the informativeness by using boilerplate language. Interestingly, although several authors investigate firms' and stakeholders' reactions to public tax return disclosure regimes, we lack studies that analyze the disclosed information itself. Considering the results of Bilicka (2019) and the restricted possibilities to access confidential tax authority data, it could be fruitful to combine and compare public tax return datasets with financial statement information.

2.6 Effects of Tax Disclosure

2.6.1 Effects on Firms and Managers

In this section, we survey studies on firm reactions to tax disclosure. The increase in a firm's level of tax transparency by introducing mandatory disclosure requirements or by third-party reporting alters the firm's information environment towards its stakeholders. If a firm expects the disclosure to be incrementally informative for adversarial recipients or to result in negative attention on its tax planning activities, the disclosure may induce changes in corporate outcomes. Theoretically, several corporate responses are conceivable (see Section 2.3.3.2). First, firms might attempt to prevent becoming subject to the disclosure requirement (Lenter et al., 2003). Second, firms might adjust their tax planning behavior if sustaining the current tax strategy becomes too costly upon disclosure. This firm response directly relates to the effectiveness of transparency regulations, which are designed to curb tax avoidance. However, to the extent that higher levels of tax transparency increase effective tax burdens, this may also change the marginal costs of investment opportunities, thereby distorting investment decisions.⁴⁷ More precisely, firms could respond by relocating their investments, which would be an unintended consequence from the perspective of policymakers.

⁴⁷ Prior literature provides strong evidence that corporate investment decisions are tax-sensitive (e.g., Feld & Heckemeyer, 2011; Giroud & Rauh, 2019) and that a reduction in tax avoidance opportunities might negatively

For the next parts, we distinguish between studies that examine corporate reactions to tax disclosure regulations (Section 2.6.1.1) and studies on the effects of actual tax disclosure on firms and managers (Section 2.6.1.2). Following the classification outlined in Section 2.2.2, we first survey corporate responses to public tax disclosure regimes before we turn to the reactions to confidential tax reporting rules.

2.6.1.1 Firm Reactions to Tax Disclosure Regulations

2.6.1.1.1 Public Tax Disclosure Regimes

Public tax disclosure regulations primarily aim to improve firms' accountability and compliance towards investors and other stakeholders. Nevertheless, tax authorities may also use the published information. Due to these various recipients, the potential effects of increased transparency on firms could be driven by different channels. For instance, firms might reduce their tax avoidance level in response to (expected) reputational risks or due to improved tax enforcement or both.

With the implementation of FIN 48 in 2007, the Financial Accounting Standards Board (FASB) intended to standardize the treatment of tax uncertainty in financial reporting, which was subject to substantial diversity before. US firms were now required to disclose their aggregated tax reserve amounts (UTBs). Given the comprehensive disclosure requirements in the notes, practitioners expressed concerns that this information would provide the IRS with a "roadmap" to identify and audit firms' most controversial tax positions, resulting in higher tax payments (see Frischmann et al., 2008).

In general, extant research on FIN 48 indicates that the standard still allows for certain discretion, as evidenced, for example, by the substantial reduction of UTBs in connection with the introduction of Schedule UTP (Section 2.4.3).⁴⁸ Nevertheless, the disclosure of UTBs seems

affect economic real activity in high-tax countries (e.g., Overesch, 2009; Suárez Serrato, 2019). See Section 2.3.3.2 for further explanations.

⁴⁸ Moreover, findings on earnings management through tax reserves following the adoption of FIN 48 are inconclusive (see Section 2.5.1.1).

to involve risks concerning pending tax audits. For instance, Blouin et al. (2010) examine whether firms attempt to settle disputes due to the impending adoption of FIN 48. According to their findings, firms with higher IRS deficiencies were more likely to resolve disputes to avoid additional audit scrutiny. Relatedly, other studies consistently report that tax avoidance decreased in post-FIN 48 periods (Henry et al., 2016; Tomohara et al., 2012), suggesting that the tax reserves in financial statements are incrementally useful for assessing corporate tax positions.⁴⁹ Gupta et al. (2014) extend this finding by analyzing changes in state-level tax avoidance surrounding the adoption of FIN 48. Consistent with studies on the federal level, the authors document an increase in state ETRs in response to the financial reporting rule.

In sum, extant literature provides ample evidence that FIN 48 affected overall tax avoidance. Still, one limitation common to these studies is the lack of an appropriate control group since the regulation applies to all firms reporting under US GAAP. While the studies conduct several cross-sectional tests to mitigate concerns of confounding events, they cannot entirely rule out that other unobservable factors are driving the results.

As described in Section 2.2.2.1, two industry-specific CbCR frameworks have been introduced in the EU, allowing researchers to study the effects of public disclosure on firm outcomes in multinational settings. Extant literature mainly focuses on the public CbCR for European banks under the CRD IV, which became effective as of the financial year 2014. The content of these reports allows for insights into banks' international activities and profitability, although fewer items have to be reported than under the OECD's confidential CbCR. Joshi et al. (2020) formally test the impact of the CbCR introduction with archival data and provide some evidence consistent with decreased income shifting among bank affiliates in the post-adoption period.⁵⁰ However, the authors find no evidence for overall tax avoidance changes,

⁴⁹ This is also consistent with the results of Bozanic et al. (2017), who show that the IRS increasingly downloaded firms' 10-K filings after the introduction of FIN 48 (see Section 2.6.3.3).

⁵⁰ In contrast, a supplemental test of Dutt, Nicolay, et al. (2019) based on Bank Focus data suggests that the tax semi-elasticity of affected EU banks in the post-CbCR periods is similar to the one documented by Merz and Overesch (2016) for periods before the CbCR introduction.

suggesting that banks resort to alternative strategies to reduce their tax burden. This conclusion is partially questioned by Overesch and Wolff (2019). They show that the extent of the overall reduction in tax avoidance varies based on banks' exposure to public scrutiny (measured by their tax haven presences).

In a related study, Eberhartinger et al. (2020) assess whether global systemically important banks⁵¹ headquartered in the EU decrease their tax haven presence in response to CbCR. Their results imply that banks strategically shut down subsidiaries that lack real economic activity. This finding is supported by Bouvatier et al. (2018), who show that the level of commercial activities in tax havens reported by the banks remains unchanged. In sum, extant evidence suggests that the public CbCR requirement for European banks led to tax planning adjustments. Still, it remains unclear which channels (stronger tax enforcement or reputational concerns) are the primary forces for the documented effects.

So far, only one study examines the effects of mandatory CbCR requirements imposed on extractive industries, which primarily focus on increasing transparency on the different kinds of payments between firms and governments. Exploiting the staggered introduction of such regimes in Europe and Canada, Rauter (2020) shows that disclosing companies increase their payments to host governments by roughly 12%. In cross-sectional tests, he finds the effects to be stronger among firms that face higher reputational risks, suggesting that the disclosure requirements imposed reputational costs on affected firms. In additional tests, the study provides strong evidence that the increased transparency led to a shift in investment activities from disclosing firms to non-disclosing firms, causing lower overall productivity. These findings relate to prior studies in CSR disclosure literature documenting that uneven disclosure requirements can distort investment decisions and capital allocation (Christensen et al., 2019). Clearly, the results may not generalize to other transparency rules, given the peculiarities of the

⁵¹ To assess EU banks' systematic riskiness, the European Banking Authority (EBA) compiles a yearly list of large EU banks that are identified as global systemically relevant banks in line with the Basel Committee recommendations.

extractive sector (with controversies on exploitative characteristics and environmental impact). Nevertheless, they call the desirability of unevenly adopted transparency measures into question.

A small but instructive strand of literature examines the effects of public tax return disclosure by tax authorities on firm outcomes. The stated objective of public tax return policies is to encourage firms and individuals to comply with tax laws. So far, only a few countries (i.a., Norway, Japan, Australia) adopted such transparency measures.⁵² Proponents argue that such disclosure regimes enhance tax enforcement and monitoring of firms by making actual tax payments accessible for the general public (Blank, 2014). From a firm perspective, the public disclosure of complex and sensitive information involves the risk of misinterpretation of the disclosed items and subsequent pressure (Lenter et al., 2003). Thus, such measures may provide incentives to avoid disclosure ex-ante. For instance, both the Japanese and Australian regulations contain(ed) a provision that the disclosure would only apply to taxpayers above a certain taxable income threshold (see Section II of Appendix 1).

In fact, empirical findings support the expectation that firms understate their taxable income to avoid disclosure (Hasegawa et al., 2013; Hoopes et al., 2018). Descriptive evidence by Hoopes et al. (2018) indicates that the excess mass below the threshold is higher for foreign-owned businesses and private firms, consistent with higher disclosure costs for these firms. Concerning actual tax payments, the authors report only limited evidence of firms increasing their tax payments under the disclosure regime. Similarly, S. Chen (2017) finds no evidence of changes in corporate tax avoidance by Australian firms in reaction to the public disclosure, consistent with corresponding findings by Hasegawa et al. (2013) in the Japanese setting.⁵³ In

⁵² Japan abolished the public disclosure of tax return information in 2004.

⁵³ Analyzing the public tax return disclosure for *individuals* in Norway, Bø et al. (2015) report a strong response in reported taxable income to increased transparency among business owners. In particular, the information was made accessible through the internet, which increased the salience of the disclosure. The authors conclude that business owners increased their reported income to avoid “public shaming” reactions among fellow citizens.

sum, firms seem to perceive the disclosure as costly and avoid it, but it remains unclear whether the measure effectively hinders aggressive tax planning.

Slemrod et al. (2020) are the first to provide valuable insights into how public appraisal regimes for large taxpayers affect corporate outcomes. The authors analyze taxpayers' responses to a social recognition and appraisal program in Pakistan (see Section II of Appendix 1). The program publicly rewards the top 100 taxpaying corporations to promote tax compliance. According to early results, firms around the threshold manage their tax liability to become or remain eligible for the honor program. Hence, it seems that these firms attempt to monetize the social recognition associated with the honor program. As the program's benefits are transferred to the responsible managers of these firms, the behavior may also involve the self-serving interests of the responsible managers. More research is needed to understand better whether such disclosure programs cause unintended consequences for shareholders.

2.6.1.1.2 Confidential Tax Disclosure Rules

The primary purpose of confidential tax disclosure rules is to improve the amount or quality of information available to tax authorities, which are the only recipient of this disclosure. Thus, corporate responses are either attributable to improved tax enforcement or firms expecting the disclosure to update tax authorities' knowledge about corporate tax positions.

Regarding country-specific confidential tax reporting regimes, existing research mainly studies US regulations. One of the first settings that have been examined empirically is the adoption of Schedule M-3 in 2004. Under this regulation, firms with assets above USD 10 million have to provide a detailed reconciliation of their worldwide financial statement income to US taxable income. The regulation is intended to provide the IRS with additional information to assess the discrepancies between financial reporting and tax reporting (i.e., BTDs). To the extent that BTDs result from corporate tax planning strategies, increased detection risk may alter the net benefits of certain forms of tax avoidance. Consistent with this

assertion, some studies find a decline in discretionary permanent BTDs (Donohoe & McGill, 2011) and total amounts of reported BTDs (Green & Plesko, 2016) around the implementation of Schedule M-3. These findings are partially challenged by Henry et al. (2016), who even document an increase in the level of tax avoidance after the introduction of the regime.⁵⁴ Moreover, this increase is stronger for domestic firms, suggesting that the regime is more informative about foreign operations (consistent with Hope et al., 2013).

Another frequently examined private disclosure regime is Schedule UTP, which supplements corporate tax returns. As discussed in Section 2.4.3, there is ample evidence that firms report lower tax reserves (UTBs) in their financial statement following Schedule UTP. Nevertheless, some studies conclude that firms continue to claim uncertain tax positions on corporate tax returns (Honaker & Sharma, 2017; Towery, 2017), as they fail to document effects on corporate tax avoidance. Other studies even indicate an increase across several tax avoidance measures in subsequent periods (Green & Plesko, 2016; Henry et al., 2016). Overall, combined empirical evidence suggests that Schedule UTP was mostly ineffective in hindering corporate tax avoidance.

On an international level, the staggered introduction of a private CbCR by countries participating in the OECD BEPS project represents a significant regulatory shock to tax transparency from 2016 onwards. Large MNEs exceeding a certain revenue threshold are required to report a detailed geographic breakdown of their international activity and key financial items to the competent tax authority in their country of residence. The reports are subsequently shared with tax authorities in other jurisdictions. Proponents argue that the reports include previously unavailable information that may help tax authorities target audits more efficiently and detect aggressive tax planning schemes (OECD, 2015). For instance, the data

⁵⁴ The authors use a cash-based measure of tax avoidance developed by Henry and Sansing (2018). Unlike many conventional measures, their proxy is also defined for loss-years, which enables the authors to consider the entire population of profitable and loss-making firms across their sample period. Unfortunately, the study does not report robustness tests with conventional tax avoidance measures as dependent variable.

can be used to assess the profitability across countries as well as taxes paid in each jurisdiction. While the aggregated nature of the data does not allow for direct inferences about corporate tax planning strategies, the disclosure might be sufficiently costly to affect corporate behavior.

So far, three concurrent studies examine the effect of the regulation on corporate outcomes. Early evidence supports the conjecture that the increased detection risk alters the net benefits of tax avoidance (Hugger, 2020; Joshi, 2020). The studies find that regulated firms exhibit a 1-2 percentage point increase in consolidated ETRs relative to firms not subject to CbCR. On the subsidiary level, Joshi (2020) provides some evidence of reduced profit shifting among affiliates beginning in 2018. This delayed response might be due to firms learning about how tax authorities utilize the information. Interestingly, the effects of the regulation seem to be more pronounced than those documented for the public CbCR for European banks.

De Simone and Olbert (2020) examine the immediate effect of the regulation on group structures and economic activity of European MNEs using a regression discontinuity design. The authors document that firms just above the reporting threshold reduce organizational complexity by closing affiliates at low hierarchical levels and affiliates located in tax havens. This evidence is consistent with a related study of Braun and Weichenrieder (2015), who show that German MNEs dissolve tax haven subsidiaries following the signing of bilateral TIEAs.⁵⁵ The respective tax haven affiliates presumably did not have sufficient economic substance to justify profit attribution during a tax audit. Additional tests by De Simone and Olbert (2020) suggest that MNEs reallocate economic activity to European countries with preferential tax regimes by increasing investments in tangible assets and employment in these locations. Thus, firms seem to adjust investment decisions in response to increased transparency. Overall, these studies provide robust evidence that increased transparency on corporate activities in low-tax jurisdictions affects businesses' location choices.

⁵⁵ While the focus of TIEAs is rather on fighting tax evasion of wealthy individuals (see Section 2.2.2.2), the exchanged data may also reveal information on certain tax avoidance strategies of MNEs based on tax haven structures.

Apart from direct effects on corporate tax planning strategies, Hugger (2020) reports some evidence that MNEs manipulate their revenues downwards to avoid being subject to the CbCR obligation.⁵⁶ Cross-sectional tests show that the excess mass below the threshold is higher for private firms with fewer reporting requirements and more tax aggressive firms. CbCR arguably invokes higher potential costs for these firms (both in terms of preparing the reports and of tax payments), which increases the incentive to manipulate the revenues below the threshold.

2.6.1.2 Firm Reactions to Actual Disclosure of Tax-Related Information

Under most transparency regulations, companies enjoy some discretion regarding the data or information being disclosed. However, companies also encounter situations in which they have no control over the published information or the tonality, for example, in cases of information leakage or public campaigns. Such disclosures are typically characterized by a public shaming component for perceived corporate misbehavior (e.g., aggressive tax planning). As we have discussed in Section 2.4.2, public attention in the form of press articles or campaigns by NGOs on corporate tax behavior seems to be an important factor for firms' subsequent tax disclosure decisions.

Beyond disclosure choices, prior literature shows that media attention on corporate behavior can induce firm responses (e.g., Dyck et al., 2008). According to recent survey evidence, managers are increasingly concerned about reputational risks associated with corporate tax planning activities (Graham et al., 2014). Apart from reputational concerns, publicly revealed tax arrangements may also be informative for tax authorities. Thus, public revelations may provoke corporate responses, such as changes in tax avoidance. Of course, under rational decision-making, firms will only react if the actual costs resulting from increased

⁵⁶ Joshi (2020) and De Simone and Olbert (2020) also test for bunching behavior, which would cast doubts on the validity of their identification strategy, but do not find evidence for self-selection. Importantly, the result of Hugger (2020) is only significant for the last period in his sample (i.e., in 2018) while De Simone and Olbert (2020) observe data only until 2017. Apart from different sample periods, differences in sample composition may also explain the conflicting findings.

transparency exceed the expected net savings from tax avoidance. This premise might explain why extant studies fail to find an association between public scrutiny and tax behavior upon media attention (S. Chen et al., 2019; Gallemore et al., 2014).⁵⁷ Gallemore et al. (2014) further investigate whether firms or their managers bear reputational costs upon the revelation of tax shelter activities. Across a series of tests, the authors find no evidence that the revelation led to changes in management turnover, sales, or marketing expenses relative to other firms. While external pressure due to perceived corporate misconduct can induce changes in corporate tax behavior (Dyrenge et al., 2016), it remains unclear under which circumstances reputational costs materialize. In sum, the general effect of media coverage on firms' tax behavior seems somewhat limited.

In a recent study, O'Donovan et al. (2019) investigate the effects of the Panama Papers that revealed secret corporate offshore activities of multinational firms relating to bribery, tax evasion, and tax avoidance. Their analysis shows that affected firms were unable to sustain their level of tax avoidance following the leak. Since the information was mostly unknown to tax authorities, this effect likely stems from additional scrutiny rather than reputational costs. Interestingly, the authors also find a significant reduction in commercial activities reported in deemed corrupt countries, similar to the real effects documented by Rauter (2020).

While not directly related to the studies above, Kubick et al. (2016) find that firms increase reported (cash) ETRs after receiving a public tax-related comment letter from the SEC. This finding suggests that publicly visible regulatory pressure from the SEC decreases the expected benefits of tax avoidance and results in higher tax payments. Moreover, the authors show that peer firms in the same industry adjust their ETRs (regardless of having received a tax-related comment letter themselves), consistent with spillover effects within industries.

⁵⁷ In particular, the results are insensitive to the tax topic covered in the articles and the intensity of media coverage.

2.6.1.3 Interim Conclusion

In light of the policy developments worldwide, we observe an increasing number of studies examining the effects of transparency in multinational settings. We derive several conclusions from our survey above. First, existing studies provide some evidence that firms adjust their tax planning behavior in response to increased transparency. However, this effect is limited to certain regulations (e.g., FIN 48 or CbCR). Notably, the results indicate that firms are often able to keep their overall level of tax avoidance constant, suggesting that they substitute scrutinized tax strategies. Second, an increasing number of studies respond to prior calls by Leuz and Wysocki (2016) for more research on real effects of disclosure regulations. These studies document that if tax disclosure rules affect corporate tax burdens, firms seem to change their investment decisions, which could have adverse consequences for countries adopting the regulation. Moreover, the results demonstrate that disclosure rules need to be carefully designed as firms might try to avoid falling under the regulation. Third, there is robust evidence that both types of CbCR – public and private – involve substantial costs for regulated firms, given the strong corporate responses. However, future research should assess the long-term effect of these regulations, especially regarding private CbCR. Fourth, public disclosure of tax return information (including actual tax payments) seems to be perceived as costly by affected firms. Fifth, we lack compelling large-sample evidence on whether and how reputational risks affect corporate tax policies within firms. Finally, we know little about how the introduction of qualitative tax disclosure requirements affects corporate behavior, despite the growing importance of such reporting regimes. One exception is the study by Bilicka et al. (2020), who find heterogeneous effects of mandatory tax strategy reports on corporate tax aggressiveness. While the level of tax avoidance remains unaffected on average, the authors document that previously tax aggressive firms decrease their cash ETRs even further relative to non-tax aggressive firms. Thus, the qualitative disclosure mandate seems to have had no effect on those firms that were specifically targeted.

2.6.2 *Effects on Equity Investors*

Considering the multitude of potential benefits and costs discussed in Section 2.3.3, it is to be expected that equity investors respond to tax-related disclosure. For our review, we distinguish between studies that examine the capital market effects of (presumed) increases in tax transparency (Section 2.6.2.1) and studies that focus on reactions to the actual issuance of tax-related disclosures (Section 2.6.2.2).

2.6.2.1 *Investor Reactions to Increases in Tax Transparency*

Increases in tax transparency, either through the introduction of mandatory reporting requirements or due to firms' voluntary commitment to enhanced disclosures, may affect several capital market outcomes. If a specific type of public disclosure reduces information asymmetry, it will mitigate adverse selection problems, such as investors trying to price-protect or exiting the market. Consequently, stock market liquidity increases. Financial accounting research provides profound theoretical support and ample empirical evidence on this positive effect on stock liquidity (Beyer et al., 2010; Leuz & Wysocki, 2016). Moreover, some studies on financial reporting disclosures suggest that a reduction in information asymmetry can manifest in a lower cost of capital (Healy & Palepu, 2001; Leuz & Wysocki, 2016).

As tax-related disclosures contain financial information about a firm (see Section 2.5.1.1), their publication could, in principle, also result in such capital market benefits. However, we currently lack empirical evidence on the effect of tax transparency on stock liquidity or the cost of capital. In this vein, a recent working paper of Hutchens et al. (2020) examines the implementation of Statement of Financial Standards (SFAS) 109 in the 1990s. SFAS 109 reformed the accounting for income taxes under US GAAP and was, in particular, designed to increase the informativeness of financial reporting on deferred taxes. Exploiting the staggered adoption of the new standard, Hutchens et al. (2020) find that individual investors (relative to more sophisticated investors) subsequently increased their stockholdings in firms most affected

by SFAS 109. This result indicates that the new standard reduced the informational disadvantages of less sophisticated investors.

Unlike stock liquidity and the cost of capital, a growing number of studies investigate the effect of increases in tax transparency on stock prices. It is important to note that stock price responses to the introduction of public tax-related disclosure requirements do not only reflect how investors evaluate the incremental informativeness of the disclosure. Instead, investors incorporate all the potential implications such regimes and the related reactions of firms and their stakeholders might have for the cost of capital and expected future cash flows. As described in Section 2.3.3.2, these implications include potential benefits from decreased information asymmetry and reduced possibilities of managers to hide expropriation activities and potential costs in the form of compliance costs, increased tax expense, proprietary costs, political costs, reputational risks, and adverse real effects. Consequently, the change in stock prices will only show the expected net effect of all these different channels.

Frischmann et al. (2008) investigate the introduction of FIN 48, which substantially increased the public disclosure requirements for UTBs in financial statements. They do not find significant abnormal stock returns for affected firms across a series of legislative events. However, investors reacted negatively when the Senate later started scrutinizing FIN 48 disclosures, suggesting that investors revised their initial beliefs regarding potential political costs. Johannesen and Larsen (2016) document a remarkable stock price decline of 5-10% around the introduction of a public CbCR regulation for EU extractive industries. In contrast, Dutt, Ludwig, et al. (2019) do not observe a significant capital market reaction to the political decision to adopt a public CbCR requirement for EU financial institutions. Two studies exploit the implementation of a public tax return disclosure regime in Australia. Hoopes et al. (2018) focus on a central date when the application threshold and the relevant items were announced

for the first time and find that affected firms exhibit negative abnormal returns.⁵⁸ S. Chen (2017) extends their analysis by three additional legislative events. Interestingly, she documents that the adverse capital market reaction to the first two events – including the date examined by Hoopes et al. (2018) – is offset by a positive response to the latter two events. Thus, she conjectures that investors re-evaluated their beliefs in the course of the legislative procedure and ultimately expected net benefits. Finally, albeit not related to a mandatory disclosure regime, O'Donovan et al. (2019) investigate the increase in tax transparency resulting from the so-called Panama Papers. This data leak provided public insights into the use of (previously secret) shell companies incorporated in offshore tax havens. Given the sheer number of leaked documents, investors were probably unable to process the detailed information about each firm on the day of the disclosure (i.e., the event day). Thus, the documented stock price decline for firms exposed to the leak of about 0.9% probably rather reflects investors' general expectations about the effects of the shock to transparency.

In summary, extant evidence on average stock price responses to upcoming increases in public tax-related disclosures is decidedly mixed. However, this can probably be explained by differences in the settings and the type of information published, resulting in different net balances of the related benefits and costs. For example, while the Panama Papers revelations about shell companies may be particularly useful for tax audits, public tax return disclosures cannot increase the information available to tax authorities (as they are the issuer). Conversely, the salience of publications made by tax authorities may be associated with higher reputational costs. Even the two public CbCR regimes in the EU exhibit heterogeneous capital market responses. While the disclosure requirement for banks is designed to assess whether they pay a “fair share” of taxes in each country, the obligation for the extractive industries primarily aims at fighting corruption in this sector. As the real effects documented by Rauter (2020) suggest,

⁵⁸ While the interpretation of Hoopes et al. (2018) focuses on the incremental stock price reaction for firms presumed to be disclosed as paying zero taxes, their results also indicate a negative reaction for all firms expected to be subject to the disclosure regime.

the large stock price drop for the extractive industries may be driven by investors' expectation that reduced opportunities of corruption will render resource extraction costlier for the affected firms. This is also in line with O'Donovan et al. (2019), showing that firms exposed to corrupt countries experience more negative investor reactions to the Panama Papers. Nearly all studies provide consistent evidence across the different settings that more tax aggressive firms experience more negative stock price responses (S. Chen, 2017; Dutt, Ludwig, et al., 2019; Frischmann et al., 2008; Hoopes et al., 2018; O'Donovan et al., 2019). Investors seem to anticipate that firms will adjust their tax planning activities in light of the new disclosures (see Section 2.6.1). Finally, sample splits indicate that the capital market generally reacts more favorably for firms with weaker governance structures, suggesting that investors expect the increase in transparency to reduce expropriation by managers (Dutt, Ludwig, et al., 2019; O'Donovan et al., 2019).

The second group of studies investigates stock price reactions to the introduction of private tax disclosure requirements. As the audience is restricted to tax authorities, confidential disclosures cannot decrease information asymmetry between firms and outside investors and do not imply proprietary and reputational costs. However, the remaining potential costs and benefits of public disclosures described above should apply accordingly.⁵⁹

Concerning the US, Donohoe and McGill (2011) find small negative abnormal returns around legislative events leading up to the passage of Schedule M-3. Similarly, Abernathy et al. (2013) document stock price declines around the announcements of the initial proposals for Schedule UTP, and stock price increases due to the issuance of the final rule (which relaxed some of the most controversial issues included in the first drafts). Both studies show that the reactions are stronger for more tax aggressive firms. In sum, the results indicate that investors predict net costs of increased transparency towards the IRS, probably in the form of compliance

⁵⁹ Nevertheless, some effects might be a bit weaker compared to public disclosures. For example, improved monitoring by tax authorities due to confidential disclosures can reduce expropriation by managers, but the impact might be stronger if the public (and, in particular, investors) had access to the information as well.

costs, potential back taxes for prior years, and reduced future tax planning opportunities. However, studies on the reaction of firms to these regulations do not suggest that firms reduced their overall tax avoidance in subsequent periods (as described in Section 2.6.1.1.2). In a multinational setting, Bennedsen and Zeume (2018) examine how investors evaluate the signing of bilateral TIEAs between high-tax headquarter countries and tax haven host countries. Interestingly, they find that the firm value of affected MNEs increased by about 2.5% after the signing. The increase was especially pronounced for firms with more complex tax haven structures and weaker governance. The authors conclude that investors expect the TIEAs to be beneficial on average as the improved monitoring by tax authorities reduces managers' opportunities to extract private benefits at the detriment of outside investors.

Considering the opposing results from the different private disclosure settings, investors seem to assume that expropriation activities are mainly based on complex international group structures, and the secrecy and opaqueness of tax havens. This result is also consistent with weakly-governed firms exhibiting more favorable stock price reactions to the Panama Papers and public CbCR introduction (Dutt, Ludwig, et al., 2019; O'Donovan et al., 2019), as these disclosures also provide information on group structures and tax haven presences. In contrast, Schedule M-3 and Schedule UTP rather focus on the domestic implications of tax planning. However, an alternative explanation could be that investors' assessment of tax transparency measures systematically differs across countries, causing the different findings in the US vs. international settings.

2.6.2.2 Investor Reactions to Actual Disclosures of Tax-Related Information

Apart from the adoption of new tax transparency rules, research also examines how the capital market reacts to the issuance of public disclosures. It is important to note that stock price changes following actual tax-related disclosures reflect how investors evaluate the news contained in the publication (if any) and whether investors incorporate the news into share prices, rather than capturing the response to increased transparency per se (Christensen et al.,

2019). We further distinguish between news about tax planning and news about firm performance.

2.6.2.2.1 Reactions to Information about Tax Planning

In theory, to the extent that tax minimization increases after-tax profits, shareholders should appreciate such activities. However, suppose potential risks from aggressive tax planning are revealed to stakeholders prevail or investors are afraid that certain tax planning structures facilitate managerial diversion. In that case, investors may view tax avoidance as value-decreasing. A group of studies examines the general association between several tax avoidance indicators from firms' financial statements and firm value measures. While most studies do not find a significant association on average (Brooks et al., 2016; Desai & Dharmapala, 2009), there is evidence that the relationship varies subject to a firm's strength of governance (Desai & Dharmapala, 2009; Wilson, 2009) and the type of tax planning (Inger, 2014). Furthermore, Inger et al. (2018) show that investors' tax avoidance assessment also depends on the informativeness of a firm's public disclosures. Although investors typically favor a high level of transparency, there are cases where they reward low readability of the tax footnotes, presumably to inhibit that tax authorities use the information to identify and challenge aggressive tax planning.

Relatedly, two recent studies conduct laboratory experiments to observe more directly how investors perceive corporate tax planning. Both A. B. Davis et al. (2017) and Jemiole (2019) provide their "simulated" investors with background information on a hypothetical company and a neutral report stating the company's ETR in comparison to the industry average. Jemiole (2019) finds no significant effect of the relative ETR on stock prices, while A. B. Davis et al. (2017) document a positive relationship between tax planning and stock prices, but only if the company has a high CSR rating. The results of these experiments should be interpreted with caution, as external validity critically depends on how representative the test persons are of actual investors and on whether estimates of stock prices stated in a simplified laboratory

setting are indicative of actual investment decisions. Nevertheless, we infer that studies based on different research methods do not provide conclusive evidence of an unequivocal overall relationship between tax avoidance and firm value. They rather suggest that investors' assessment of tax planning depends on different factors such as governance, CSR activity, and disclosure quality.

Assuming an efficient capital market, investors immediately incorporate all available information about a firm's level of tax planning into stock prices. Consequently, investors will only react to actual disclosure if it conveys new information (i.e., if it causes investors to revise their previous beliefs about a firm's tax avoidance). A few studies examine how stock prices respond to the issuance of tax-related disclosures in general-purpose financial reporting. Exploiting the news provided by the publication of the first-time UTB disclosures (after the adoption of FIN 48), Frischmann et al. (2008) find a positive association between abnormal returns and the part of the UTBs which would affect the ETR if tax authorities disregarded the underlying positions. L. A. Robinson and Schmidt (2013) observe such a positive reaction only for firms issuing low-quality UTB information, which is consistent with the finding of Inger et al. (2018) that investors sometimes reward opaque public disclosures of tax-avoiding firms due to reduced informativeness for tax authorities. However, considering how the subsequent introduction of the related private reporting requirement of Schedule UTP has affected firms' incentives regarding their public UTB disclosures,⁶⁰ it is highly probable that investors' perception has changed likewise. Focusing on the tendency of the FIN 48 rules to overstate UTB amounts (see Section 2.5.1.1), L. A. Robinson et al. (2016) document that investors are not able to identify firms which are particularly over-reserved and do not seem to incorporate this information in their stock price valuation.⁶¹ Finally, Campbell et al. (2019) provide

⁶⁰ As described in Section 2.4.3, evidence suggests that firms systematically reduced the UTB amounts recorded in their financial statements and simultaneously increased the qualitative UTB disclosures in the tax footnotes following the introduction of Schedule UTP.

⁶¹ It has to be noted that the sample period of L. A. Robinson et al. (2016) is not long enough to observe whether this mispricing has changed after the introduction of Schedule UTP.

evidence that the extent of tax-related risk factor disclosures in a firm's 10-K filing is positively associated with contemporaneous stock returns. Taken together with the results on their informativeness about future cash flows (see Section 2.5.2), it appears that investors correctly interpret and reward these qualitative disclosures as news about reasonable risk-taking.

Turning to public disclosures by third parties, S. Chen (2017) and Hoopes et al. (2018) additionally examine the capital market response to the first actual publication under the Australian public tax return disclosure regime. S. Chen (2017) observes a small negative stock price reaction on average for all firms contained in the ATO report, but no significant effect for the most salient cases (i.e., firms disclosed as paying zero taxes). However, focusing only on the information disclosed does not account for the beliefs investors have already formed prior to the publication. Hoopes et al. (2018) attempt to adequately model the news conveyed by the report and document that unexpected zero taxpayers (i.e., firms whose respective financial statements would have suggested positive tax payments) experience small stock price declines.⁶² Kays (2019) defines the news component more neutrally as the difference between the amounts of taxable income and tax liability disclosed in the report and the amounts inferred from corresponding financial statements. She finds that abnormal returns around the publication are related to the absolute size of the difference. Still, the effect is mitigated if a firm issues additional voluntary disclosure explaining the difference. In summary, evidence suggests that the capital market reacts to news contained in the ATO's public tax return report and that investors view the surprise of being disclosed as zero taxpayer negatively.

Media articles constitute another source of third-party disclosures about tax avoidance. Firms usually cannot influence their occurrence and content, and they are often characterized by a negative wording, implying a shock in public scrutiny (see Section 2.6.1.2). Consequently,

⁶² In an additional test, S. Chen (2017) also focuses on the news conveyed by the report. She finds a negative stock market reaction for firms whose actual tax payments disclosed by the ATO exceeded the amounts expected based on available financial statement information, which suggests that investors are rather concerned about tax costs than about reputational costs for these firms.

capital market reactions to media articles capture the response to news about tax avoidance and investors' expectations about potential consequences from this shock in public scrutiny.

Hanlon and Slemrod (2009) identify US firms alleged in media articles of engaging in tax shelters⁶³ and find average stock price declines of about -1.2% in a three-day event window around the publication. Gallemore et al. (2014) replicate this approach with a slightly increased sample and confirm the temporary effect, but they also show that the negative reaction completely reverses within 30 days. Brooks et al. (2016) construct a more recent sample of UK firms subject to media coverage on their tax reduction activities (including both tax avoidance and tax evasion). Their average results also indicate modest short-term stock price drops, which are at least partially reversed within a month. However, cross-sectional tests reveal more pronounced and more permanent negative investor reactions for smaller firms, consumer-facing firms, and articles about corporate inversions (i.e., a particular disreputable form of tax avoidance). These cross-sectional differences suggest that the stock price responses are driven by investors' expectations of reputational costs and consumer backlashes due to negative media attention rather than by new information about a firm's tax avoidance activities. Finally, Blaufus et al. (2019) examine a sample of media articles on large German firms. They find a short-term⁶⁴ stock price decline of about 1.4% around news about (illegal) tax evasion, but no significant response to news about (legal) tax avoidance, indicating that investors distinguish according to legality. Moreover, investors appear to react positively to news about tax avoidance if they expect a firm's overall tax risk to be low (Blaufus et al., 2019).

Instead of general press articles, Huesecken et al. (2018) exploit the publication of leaked information about hundreds of advance tax rulings between Luxembourg fiscal authorities and several large MNEs (known as Lux Leaks). This setting is distinctive as the tax planning

⁶³ For a description of tax shelters, see Section 2.5.1.1.

⁶⁴ Unfortunately, Blaufus et al. (2019) only examine short-term stock price reactions (i.e., within a three-day window around the publication of the respective news) and do not provide evidence on whether the observed effects are permanent or temporary.

structures revealed had been approved by the relevant tax authority. Interestingly, the authors find an average stock price increase for the affected firms around the publication of the documents. Consistent with the results of Campbell et al. (2019) and Blaufus et al. (2019), investors seem to reward news about tax avoidance activities associated with low (legal) risks. However, MNEs explicitly mentioned in media reports about Lux Leaks experience less favorable reactions, suggesting that the benefits can be neutralized by negative consequences of increased public scrutiny (in line with the cross-sectional findings of Brooks et al., 2016).

2.6.2.2.2 Reactions to Information about Firm Performance

As illustrated in Section 2.5.1.1, accounting research has documented that tax disclosures in financial statements contain information about current and future earnings. Some of these studies suggest that investors use certain performance information comprised in BTDs for their stock valuation. However, evidence of associations between BTDs and future stock returns and the so-called tax expense anomaly⁶⁵ indicate that the pricing by the capital market is incomplete (see the review of Graham et al., 2012).

More recent studies examine whether additional tax disclosures (other than in financial statements) can help investors better process this information. Schwab (2009) provides some support that the mispricing of BTDs is weaker when firms voluntarily report on BTDs in their earnings announcements. He concludes that stating the information in a salient and straightforward manner improves investors' understanding. Baik et al. (2016) analyze the contribution of analysts as information intermediaries. They distinguish between cases where analysts only forecast a firm's after-tax earnings and cases where analysts additionally issue pre-tax income forecasts (which implies a forecast of the tax expense and the ETR). Results show that the tax expense anomaly is mostly eliminated by the presence of analysts' implicit tax expense forecasts, which suggests that these third-party disclosures draw investors'

⁶⁵ Thomas and Zhang (2011) document that tax expense surprise (defined as the difference between tax expense recorded in the current quarter and tax expense recorded in prior year's corresponding quarter) is positively related to future stock returns.

attention to tax expense and assist them in comprehending the implications for future earnings. Similarly, Mauler (2019) documents that stock price reactions to earnings announcements depend not only on whether a firm meets analysts' after-tax earnings forecast but also on whether it meets analysts' pre-tax income forecast. Consequently, investors seem to assess analysts' tax-related forecasts as value relevant.

Considering that taxable income constitutes an alternative profit measure, it seems plausible that tax return data may help the capital market assess its current and future performance. Two studies investigate settings where selected investors get access to confidential tax returns. Deméré (2018) exploits the features of the US syndicated loan market, where lenders frequently request tax returns when evaluating bank loan applications. He assumes that when a syndicated loan is traded on secondary markets and the loan syndicate includes institutional investors, the tax return information is disseminated to the equity market and can thus be incorporated into share prices. His findings confirm that the tax expense anomaly (and other common forms of tax-related mispricing) decreases after the issuance of syndicated loans involving institutional investors. Interestingly, the effect is stronger after the introduction of Schedule M-3, suggesting that its detailed book-tax reconciliation is informative with regard to tax planning and firm performance. Finally, Minnis and Sutherland (2017) focus on debt investors and document that banks as lenders regularly request tax return information when monitoring small borrowers, sometimes as complements to and sometimes even as substitutes of (typically unaudited) financial statements.

Altogether, recent evidence indicates that investors' mispricing of performance information in financial statements tax disclosures can be mitigated by additional disclosures (such as earnings announcements and analysts' tax expense forecasts). In particular, investors find tax return data incrementally informative over financial statements.

2.6.2.3 *Interim Conclusion*

So far, research has primarily focused on examining stock price reactions to (1) the introduction of tax transparency regimes and (2) the issuance of tax-related disclosures. While the former reflects investors' expectations about all costs and benefits (including potential firm and stakeholder reactions) associated with a new disclosure requirement, the latter incorporates both investors' evaluation of the news about tax planning and potential implications of a shock in public scrutiny (especially in case of third-party disclosures). Consequently, stock price changes only reveal the net aggregate effect, which explains the partially conflicting and often weak average results. Throughout the different settings, consistent cross-sectional evidence shows that investors expect the most tax aggressive firms and firms susceptible to reputational risks to bear the highest costs of increased tax transparency. Investors reward tax avoidance associated with low (legal) risks and, in some cases, even prefer low-quality disclosures by firms to decrease the informativeness for tax authorities. Interestingly, results suggest that even confidential disclosures to tax authorities can benefit shareholders by reducing opportunities for managerial diversion. These beneficial effects are most pronounced when the disclosures contain data on international group structures and tax haven presences.

Apart from tax planning, tax-related disclosures convey information about firm performance, and recent studies show that increased transparency helps investors realize and price this information. Considering this potential role in mitigating information asymmetry, we encourage research on whether public tax disclosure regimes (e.g., public CbCR or public tax return disclosure) affect stock liquidity or the cost of capital. Furthermore, we currently lack evidence on how the capital market evaluates the introduction and issuance of new qualitative tax disclosures (e.g., tax strategy reports).

2.6.3 *Effects on other Stakeholders*

2.6.3.1 *Analysts*

Accounting research has documented that financial analysts play a valuable role in enhancing the capital market's efficiency since their earnings forecasts and recommendations affect stock prices (Healy & Palepu, 2001). Thus, it is important to examine how analysts understand and process tax-related information and how an increase in tax transparency affects their role as intermediaries. In theory, the relationship between the volume of public corporate disclosure and financial analysts is ambiguous. On the one hand, an expansion of corporate disclosure reduces information acquisition costs, which potentially attracts analysts and improves the quality of their reports. On the other hand, an increase in publicly available information may diminish analysts' opportunities and incentives to gather private information, resulting in a reduction in analyst activity and forecast quality (Christensen et al., 2019; Healy & Palepu, 2001). Consistent with a complementary relationship, empirical evidence on financial reporting mainly suggests that a greater extent and higher quality of firms' financial disclosures are associated with increased analyst following, improved analyst forecast accuracy, and lower forecast dispersion (Leuz & Wysocki, 2016).^{66, 67} Similarly, first studies on CSR disclosure indicate that firms issuing voluntary CSR reports exhibit higher analyst forecast accuracy and that financial intermediaries are among the primary users of mandatory CSR disclosures (Christensen et al., 2019).

Turning to tax-related information, research on accounting for income taxes has documented that analysts misinterpret certain tax disclosures in financial statements

⁶⁶ See in particular, Tables 3.1 and 3.2 of the online appendix to Leuz and Wysocki (2016).

⁶⁷ In contrast, some studies suggest that the introduction of Regulation Fair Disclosure (RegFD) in the US reduced both the information production by analysts and the quality of their reports (Leuz & Wysocki, 2016). However, it is important to note that RegFD did not merely increase public disclosure but explicitly prohibited managers from confidentially providing relevant information to selected capital market participants (including analysts). As a result, RegFD considerably limited the possibilities of analysts to acquire superior information. In addition, several concurrent institutional changes make it difficult to distinguish whether the observed effects are due to the RegFD or to confounding factors (Beyer et al., 2010).

(K. C. Chen et al., 2003) and that their forecasts do not completely incorporate performance information contained in BTDs (D. P. Weber, 2009).⁶⁸ This failure may be a potential driver for investors' mispricing of BTD information (see Section 2.6.2.2.2). Schwab (2009) complements prior results and finds that the correlation between analyst earnings forecast errors and BTD amounts is weaker when firms voluntarily report on BTDs in their earnings announcements. He infers that the salience and conciseness of this voluntary disclosure enhance analysts' understanding.

Two recent studies exploit the particularities of interim reporting to investigate the information processing of analysts. Under US GAAP, firms are required to use the integral method to compute tax expense in their 10-Q filings (ASC 740-270). According to this method, quarterly tax expense is calculated based on year-to-date pre-tax income and an ETR estimate for the full year. Thus, the interim reports for the first three quarters of a financial year convey a de facto mandatory management forecast of the annual ETR. However, the effects of discrete items (e.g., tax rate and tax law changes, settlements with tax authorities) have to be fully recorded in the quarter in which they occur. Consequently, the incidence of discrete items distorts the mandatory ETR forecast and reduces its usefulness for analysts.

Bratten et al. (2017) find that 74% of analyst ETR forecasts⁶⁹ deviate meaningfully from management's mandatory ETR forecasts contained in the 10-Q filings and that analysts are about three times more likely to disagree in the presence of discrete items. Moreover, the deviating analyst forecasts are more accurate than management's mandatory forecasts, particularly if discrete items occur and if the general complexity of forecasting the ETR is higher. The authors interpret their results as evidence that analysts understand the complex tax environment and identify and correct the deficiencies of the integral method. N. Chen et al. (2019) additionally consider that many firms also provide voluntary forecasts of the ETR in the

⁶⁸ See also the review of this literature in Graham et al. (2012).

⁶⁹ As explained in Section 2.6.2.2.2, analysts often forecast both after-tax earnings and pre-tax income, which implies a forecast of the ETR.

conference calls accompanying the release of the interim reports for the first three quarters of a financial year. Managers may use the flexibility of these voluntary ETR forecasts to overcome potential distortions inherent in the mandatory forecasts. N. Chen et al. (2019) document that analysts incorporate the news of both types of management forecast – compulsory and voluntary – when subsequently revising their own ETR forecast. However, analysts seem to find management’s voluntary forecasts more informative, especially in the presence of discrete items and when analysts do not simply mimic the mandatory forecast. Overall, these results suggest that the superiority of analysts’ deviating ETR forecasts found by Bratten et al. (2017) may be partially driven by analysts utilizing the public information in management’s concurrent voluntary forecasts (rather than private information).

In contrast to quarterly ETR forecasts, Koutney (2019) focuses on annual forecasts issued at the beginning of a financial year. Managers often communicate a prediction of the following year’s ETR in conference calls on fourth-quarter earnings announcements. Koutney (2019) finds that analysts’ annual ETR forecasts are less accurate when they deviate from management’s voluntary forecasts. He also observes that disagreeing analysts tend to have less experience and less access to private information. Consequently, analyst disagreement with voluntary forecasts seems to be driven by overconfidence rather than by superior knowledge.

In summary, extant evidence suggests that firms’ voluntary tax-related disclosures (in the form of information on BTDs or management ETR forecasts) improve analysts’ forecast accuracy. This finding is consistent with the favorable effects documented for financial and CSR disclosure. While analysts rightly deviate from distorted mandatory ETR forecasts in quarterly reports, they do not appear to be able to outperform management’s voluntary ETR forecasts. Thus, analysts do not seem to have superior private information on the implications of income taxes on average. Against this backdrop, it is surprising that we lack any evidence on whether analysts use the information of new public tax-related disclosures (e.g., public CbCR, public tax return disclosure, tax strategy reports) and on whether the mandated increase

in tax transparency affects analyst coverage, forecast accuracy, and forecast dispersion. Moreover, considering the emergence of studies on the relationship between a firm's tax aggressiveness and analyst activity (Allen et al., 2016; Balakrishnan et al., 2019; Francis et al., 2019; He et al., 2020), it would be interesting to examine how changes in tax transparency influence this relation.⁷⁰

2.6.3.2 *Consumers and the General Public*

Consumers and, more broadly, the general public are relevant stakeholder groups because their perception of firms ultimately determines many firms' economic success (through purchase decisions). This applies in particular to businesses that offer products and services for private customers. The decision to enter into a transaction with a specific firm likely depends on whether the perceived corporate attributes match individual preferences and values. Prior evidence from CSR literature suggests that the congruence of personal views with corporate CSR activities positively affects consumer perceptions, resulting in a higher willingness to pay and increased brand loyalty (Christensen et al., 2019). From a societal perspective, tax payments contribute to public budgets, which are used to finance public goods and services. If consumers consider paying taxes a necessary obligation towards society, revelations about aggressive tax avoidance might negatively impact consumers' assessment of firms, or even actual purchase behavior (Middleton & Muttonen, 2020).⁷¹ Given the evolving policy discussions and leakages featured in the media, the overall awareness on the role of taxation for public finance among consumers might have risen over the last years (Middleton & Muttonen, 2020). Against this background, examining the effects of corporate tax transparency on consumer behavior is particularly relevant.

⁷⁰ As a first example in this context, Balakrishnan et al. (2019) investigate whether additional voluntary tax-related disclosures can mitigate the negative association between tax aggressiveness and analyst forecast accuracy, but do not find conclusive evidence.

⁷¹ We note that consumers' evaluation of corporate tax practices is likely not restricted to legal considerations of the case.

Since the initial call by Hanlon and Heitzman (2010) for more research on the perception of tax avoidance by consumers one decade ago, several studies have attempted to address this question using laboratory experiments or surveys. Early experimental studies find that consumers react negatively to news about aggressive corporate tax strategies, which is reflected in lower reputation of the firms and reduced willingness to pay for a given product (Antonetti & Anesa, 2017; Asay et al., 2018; Hardeck & Hertl, 2014). At the same time, consumers are unwilling to accept a price premium for responsible tax behavior. Thus, the revelation of aggressive tax behavior seems to impose reputational damage on firms. Moreover, the relationship between tax avoidance and consumer reaction appears to be moderated by personal values and moral views on tax compliance, which is consistent with related findings of studies on consumer reactions to CSR activities (Christensen et al., 2019). Consumers' awareness of negative externalities of corporate tax avoidance likely constitutes an important factor for their reactions. However, the salience of news about corporate tax avoidance seems rather low. In a survey by Asay et al. (2018) conducted among US citizens, only 20% of respondents recall ever having read a media article about aggressive corporate tax behavior.

One major limitation of laboratory experiments and surveys is that they may suffer from social desirability bias, i.e., respondents choose the answer they perceive as socially acceptable. Specifically, the use of suggestive or judgmental language (e.g., “aggressive” vs. “responsible” tax practices) may induce certain responses. More recent studies attempt to overcome the problem by framing information about corporate tax practices in a more neutral way (Hoopes et al., 2018; Jemiole, 2019)⁷² or using incentive-aligned mechanisms to elicit consumers' actual willingness to pay (Hardeck et al., forthcoming). While Jemiole (2019) fails to find an association between tax management and consumer behavior, Hoopes et al. (2018) document adverse consumer reactions in terms of purchase intentions and perceived ethicality to the

⁷² In the setting of Hoopes et al. (2018), the Australian tax authority published the information on the tax return data in a neutrally worded report on its website.

partial tax return disclosure in Australia, but only for privately-owned domestic firms. The authors conclude that consumer sentiment for global and large brands is more resilient than consumer sentiment for domestic brands. In a recent study, Hardeck et al. (forthcoming) report a strong impact of corporate tax avoidance on consumers' attitudes towards the firm but only marginal effects on their willingness to pay. Importantly, these effects are fully mediated by CSR perceptions of the firm, which extends prior results documenting a direct impact of tax behavior on CSR perception or perceived ethicality (Antonetti & Anesa, 2017; Hoopes et al., 2018; Jemiole, 2019). In sum, these findings confirm the expectation that consumers link observed tax behavior to CSR, suggesting that tax behavior and CSR are viewed as complements rather than substitutes (see Section 2.3.2). However, even though consumers care about corporate tax practices, they barely adjust their purchase behavior or willingness to pay (Asay et al., 2018; Hardeck et al., forthcoming). This finding might be one explanation of why other studies do not observe any measurable economic consequences on the corporate level following the revelation of corporate tax shelter activities (Gallemore et al., 2014).

We have seen several cases of consumer backlash caused by revealed corporate tax practices over the last years. A prominent example is Starbucks, which experienced intense public pressure and calls for a boycott due to its marginal tax payments in the UK. In contrast to selected anecdotal evidence, the surveyed studies provide mixed evidence on consumer reactions. While there is compelling evidence for effects on the perception of firms, the impact of corporate tax strategies on consumers' purchase decisions seems modest at best. Broadly speaking, firms' tax behavior could adversely affect consumers' attitudes towards the firm, but on average, firms are unlikely to incur actual costs due to adjusted purchase behavior. Still, this missing link does not mean that increased tax transparency has no effect on consumers. Future research should try to shed light on the discrepancy between stated attitudes and real actions uncovered in prior literature. Moreover, upcoming studies should examine more cross-sectional differences, such as different moral norms and attitudes among consumers. For instance,

reputational costs arguably vary across geographic regions (Hardeck et al., 2019; Wilde & Wilson, 2018). Thus, future studies should follow Hardeck et al. (forthcoming), who conduct their experiment with US and German participants to exploit the cultural differences in personal views on taxation.

2.6.3.3 *Tax Authorities*

As illustrated throughout Section 2.3, tax authorities play a particular role among the recipients of tax-related disclosures since they potentially use the reported information when assessing a firm's tax liability. If certain (public or private) disclosures help them detect and challenge legally questionable forms of tax planning, tax revenues increase. However, the introduction of tax transparency regimes is often accompanied by debates on whether the new reporting requirements are truly informative to tax authorities.⁷³ To enrich these discussions, research on how and when tax authorities use different types of disclosures is necessary. Unfortunately, tax authorities' information processing is mostly unobservable for researchers, even if access to administrative data is granted.⁷⁴

An innovative study of Bozanic et al. (2017) overcomes this problem. They exploit the fact that SEC server log files can track users accessing the Electronic Data Gathering, Analysis, and Retrieval System (EDGAR), the central database of public financial disclosures made by SEC-registered US firms, and identify when IRS employees download a firm's 10-K filings. The authors document that larger companies and more tax aggressive companies tend to attract more attention from the IRS. Examining the increase in public tax disclosures in financial statements mandated by the introduction of FIN 48, Bozanic et al. (2017) find that IRS' downloads of 10-K filings multiplied in the subsequent periods (relative to other EDGAR downloads made by the IRS). This result suggests that the IRS considered the UTB disclosures in financial statements as informative about tax planning, consistent with some evidence that

⁷³ For more details, see Section 2.3.3.2.

⁷⁴ Administrative datasets may reflect audit frequencies and audit adjustments, but usually do not contain information on which disclosures tax authorities consider in their decision-making.

firms reduced their tax aggressiveness and increased tax payments after the adoption of FIN 48 (see Section 2.6.1.1.1). Finally, Bozanic et al. (2017) also observe a subsequent decline in 10-K downloads as soon as the private disclosures under Schedule UTP became available to the IRS. The relative informativeness of the aggregate BTB amounts in public financial statements seems to have decreased now that the IRS confidentially receives a narrative description of the underlying positions.⁷⁵ Altogether, the findings indicate that the interaction of public and private disclosure requirements jointly affects tax authority behavior.

Following the insights of Bozanic et al. (2017), the more recent introduction of tax transparency regimes poses interesting research questions. For example, do tax authorities incorporate the information in MNEs' public segment reporting when evaluating profit shifting risks? If so, has its relevance changed since tax authorities receive confidential CbC reports? And do tax authorities access public CbCR data of EU financial institutions or public tax strategy reports of UK firms? Considering the multitude of public and private disclosures available to tax administration, policymakers should be particularly interested in evidence on whether tax authorities are able to recognize and assess all relevant information or whether they face problems of information overload. Finally, going beyond recording tax authority downloads of documents, it would be interesting to investigate how different types of disclosures affect tax audit decisions and audit efficiency. According to the OECD's (2020a) first publication of aggregate CbCR data, national tax administrations stated that they employ CbCR information to help identify which MNEs to audit and to plan audits, but not as evidence of BEPS. Future studies could try to verify this statement, e.g., by surveying firms' tax executives on CbCR-related inquiries of tax authorities and resulting in international tax disputes. Confidential client data of large tax consultancies may constitute another potential source of information in this regard. Despite existing data restrictions, the particular role of tax

⁷⁵ This result is also in line with firms voluntarily increasing their qualitative UTB disclosures after the informative value for the IRS had decreased due to Schedule UTP (see Section 2.4.3).

authorities as the addressee of tax-related disclosure offers an interesting avenue for future research.

2.7 Conclusions and Suggestions for Future Research

This study provides a comprehensive review of the evolving research on corporate tax transparency. In this final section, we summarize and synthesize the main findings from our survey of the empirical literature (Sections 2.4-2.6), relate the results to the theoretical underpinnings (Section 2.3) and our classification of disclosures rules (Section 2.2), and offer several suggestions for future work in this area. Focusing on the different research questions, we arranged our review of empirical evidence, according to determinants, informativeness, and effects of tax-related disclosures (similar to Christensen et al., 2019). Figure 3 illustrates the number of studies examining each group of research questions. More than half of the studies investigate different kinds of effects (mainly on firms and investors), while determinants account for about one third.

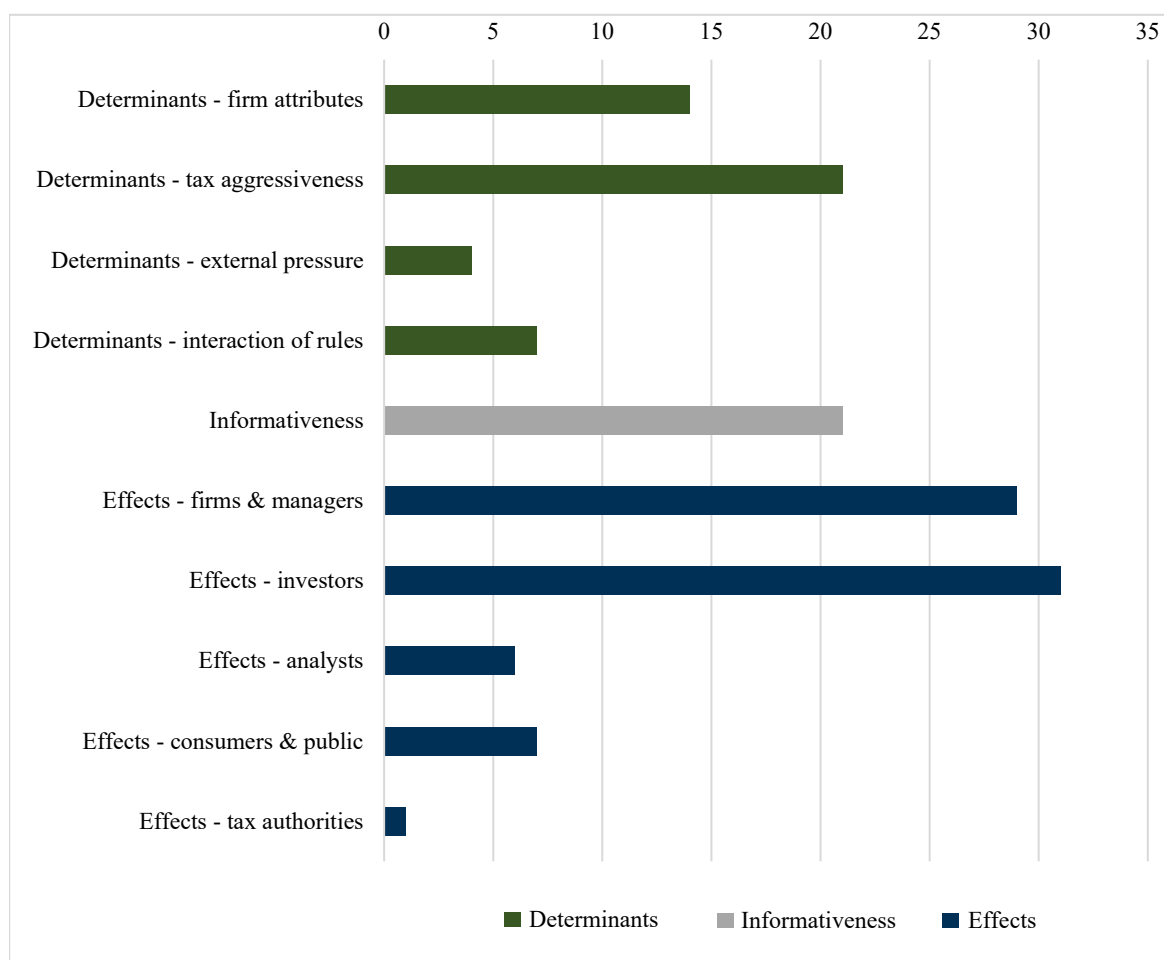
Our review of the empirical literature on the determinants of tax disclosure decisions shows that the interpretation of firm characteristics and attributes is highly context-specific, with different channels often being tested in isolation. Research would undoubtedly benefit from a more comprehensive theoretical framework, which could help to reconcile conflicting empirical findings. To this end, our conceptual discussion of tax transparency in Section 2.3.3 may serve as a starting point. In line with its intuitive importance, the reporting firm's level of tax aggressiveness constitutes the most well-researched determinant. Evidence suggests an ambiguous relationship, reflecting a tradeoff that firms face: On the one hand, tax aggressive firms are more inclined to reduce the quality of or even do not fully comply with hard-fact mandatory disclosures (e.g., UTBs, subsidiary list) to keep this sensitive information private. On the other hand, tax aggressive firms tend to issue more disclosures which involve a higher degree of leeway (i.e., voluntary and/or more qualitative publications). They may do so either to legitimize their tax arrangements (consistent with legitimacy theory) or to reduce information

asymmetry resulting from the related complexity. Remarkably, we lack studies examining the role of managers in discretionary tax disclosure decisions. This is surprising, considering the ample evidence from financial disclosure research (Healy & Palepu, 2001) and the growing literature on the relationship between managerial characteristics and incentives and firms' tax planning (Dyreng & Hanlon, 2019; Wilde & Wilson, 2018). Thus, focusing on how managers – and tax executives – simultaneously decide about tax planning and tax disclosure can be a promising avenue for future research. Finally, we encourage more cross-country studies on disclosure determinants to shed light on the influence of political, institutional, and cultural differences.

Regarding the informativeness of tax-related disclosures, early literature has developed and applied several tax avoidance measures based on financial statement information. However, these measures are hard to validate, and they all capture only certain forms of tax avoidance (Hanlon & Heitzman, 2010). A very recent group of studies exploit first published CbCR data as a new source to estimate profit shifting.

They document considerable advantages in terms of country coverage but also important limitations due to missing variables and limited comparability across reports. Voluntary CbCR, according to the new GRI Standard 207, may offer additional opportunities for future studies. While we look forward to more research employing larger and longer-term CbCR datasets, it seems unlikely that this type of disclosure will end the longstanding academic discussion about the size of international profit shifting.

Considering the difficulties in inferring taxable income and actual tax payments from financial statements, future contributions could be made by examining the incremental information content of publicly disclosed tax return data and linking it to financial statement information. More generally, we suggest that future studies combine and compare different types of disclosures to get a more complete picture and develop more nuanced tax aggressiveness measures.

Figure 3: Number of Empirical Studies on Tax Transparency by Research Question

Notes: Figure 3 depicts the number of empirical studies on tax transparency by research question. We include all studies on tax transparency which we refer to in our review of the empirical literature (Sections 2.4-2.6) and/or which are summarized in Appendix 2. Studies investigating multiple research questions are counted multiple times.

As indicated in Figure 3, the effects of tax transparency on firms have received considerable attention among scholars. Empirical findings mainly suggest that firms perceive the introduction of tax disclosure regimes as costly. Several firms try to prevent falling under disclosure obligations (e.g., by bunching below applicable size thresholds). For firms subject to the respective requirement, there is some evidence that they close tax haven subsidiaries and adjust their tax planning behavior. However, the results for the overall effect on tax avoidance are mixed, potentially due to the substitution of more transparent forms of tax planning by less obvious or controversial strategies. Besides, several studies document real responses (e.g., changes in investments and employment) following mandated increases in tax transparency.

The extent of the effects varies across the different settings, yet reactions are generally stronger for disclosures on international activities. Besides, it should be noted that several studies on recent tax-related disclosure requirements necessarily rely on relatively short post-introduction periods, leaving room for future research on the longer-term effects.

While the consequences of tax transparency for investors have attracted the largest number of studies, virtually all of them examine stock price reactions. Changes in stock prices following the introduction of a reporting requirement or the issuance of disclosure reflect the aggregate net effect of all costs, benefits, and reactions expected by investors. This makes it difficult to interpret the results and reconcile them with other findings (e.g., firm reactions). Nevertheless, cross-sectional evidence indicates that investors expect the most tax aggressive firms to face the highest costs of disclosure, reward legal tax planning, and reasonable risk-taking, and, in some cases, accept low-quality disclosures to conceal tax avoidance from tax authorities. Some results also suggest that investors expect to benefit from improved monitoring. Yet, owing to the concentration on stock price responses, we largely lack empirical literature on whether and how investors actually utilize the disclosed information. In light of the robust findings that financial disclosures can mitigate information asymmetry, it also seems worthwhile to analyze whether increases in tax transparency affect stock liquidity and the cost of capital.

About a handful of studies examine the effects on analysts. These studies are essentially confined to certain voluntary tax-related disclosures in earnings announcements and conference calls and find that the issuance of this information improves forecast accuracy. Therefore, it is up to future research to investigate whether the introduction of tax-specific public disclosure regimes (e.g., CbCR, public tax returns) has influenced analyst activity and whether the respective disclosures help analysts enhance their forecasts.

Research on the responses of consumers and the general public to tax-related disclosures is primarily based on surveys and laboratory experiments. Extant findings suggest that

revelations about a firm's tax aggressiveness negatively affect consumers' perception of the concerned firm. In contrast, empirical literature so far has not been able to provide conclusive evidence that such revelations lead to changes in consumers' purchase decisions. Future studies could thus try to shed light on this discrepancy and on the mechanisms of how (stated) attitudes may or may not influence consumer behavior. Tax transparency research may draw on existing findings and research designs from other disciplines, such as behavioral marketing and business psychology, to further explore consumer reactions. The first step in this direction is the study by Asay et al. (2018). They find that the perception of a firm's tax aggressiveness ranks very low among the factors which determine purchase decisions. In any case, it should be noted that the extent and importance of potential consumer reactions largely depend on a firm's business model and its reliance on private customers.

Despite their particular role as recipients, to date, only one study examines whether tax authorities use information from tax-related (public) disclosures. Although restricted data availability undoubtedly impedes research on this topic, academic literature would benefit from future studies on whether and how tax authorities process information from various public and private sources for planning tax audits and tax risk assessments. Surveys among tax executives or access to confidential client data of tax consultancies might help overcome data restrictions.

In general, our review shows that we know very little about how the recent increase in tax transparency affects the information processing of three important recipients – tax authorities, investors, and analysts. The following questions still need to be answered: Do the recipients access and use the information from the different tax-related disclosure requirements? How do they prioritize or compare if different disclosures with overlapping content are available? Do certain recipients (in particular: tax authorities) face problems of information overload? How do the disclosures affect the recipients' decision-making and actions (e.g., audit decisions, stock purchases, and sales, forecasts)? While there is more evidence with respect to consumers, laboratory experiments probably cannot simulate the

simultaneous availability of a multitude of different information. Thus, it remains unclear what determines the visibility and salience of tax-related information from the consumers' perspective. Overall, the identified lack of evidence on the effects on recipients implies that it is still difficult to assess whether the proposed benefits of increased tax transparency for recipients actually materialize.

Concerning costs, evidence of tax aggressive firms reducing the quality of (or even failing to comply with) mandatory disclosures and indications of firms trying to prevent falling under the reporting requirements suggest that firms perceive many disclosures as costly. However, it is not apparent which kind of costs are most prevalent. Compliance costs, double taxation or controversy costs, political and proprietary costs are often difficult to observe or quantify and have not been addressed directly by extant research. Reputational risks of tax planning apparently constitute a major concern of firms (Graham et al., 2014). Although consumers' perception of a firm seems to be sensitive to news about tax aggressiveness, empirical studies so far do not provide convincing evidence of reputational costs actually manifesting in consumers' purchase decisions or decreasing sales. While a reduction in tax avoidance is the ultimate goal of many recently introduced tax disclosure regimes, empirical findings on this effect are quite mixed. At the same time, studies document economic consequences (e.g., changes in investments) in response to increases in tax transparency. In summary, the mixed results regarding tax avoidance and the indications of unintended side effects such as bunching behavior and relocation of real investments call into questions whether tax transparency regimes efficiently fulfill their purpose.

Considering the vast diversity among tax-related disclosures, we also aim to provide researchers and policymakers with a summary of the empirical evidence on the effectiveness of selected disclosure types. Figure 4 depicts the number of studies included in our survey according to the different kinds of disclosure. The structure follows our classification illustrated in Figure 2 and explained in Section 2.2.2. Not surprisingly, more than 80% of studies focus on

public disclosures, probably due to data availability. Tax disclosures in general-purpose financial reporting account for about 45% of the empirical literature.

Several early studies investigate deferred tax and BTB disclosures in financial statements, and the results are relatively mixed. Research does neither find consistent evidence on how tax aggressiveness affects BTB reporting decisions nor an unequivocal relationship between BTB-based measures of tax avoidance and firm value. Moreover, analysts seem unable to understand the information contained in BTBs completely. A potential explanation for these inconclusive findings is that BTBs simultaneously reflect both tax avoidance and financial earnings management.

UTB information in the tax footnote constitutes the most well-studied public disclosure issued by firms. The results consistently suggest that UTBs are informative about tax avoidance since tax aggressive firms issue lower-quality UTB disclosures. Moreover, tax avoidance decreases after the introduction of FIN 48, and tax authorities seem to download public UTB information (at least before the implementation of Schedule UTP).

The empirical findings for segment reporting and subsidiary lists are concentrated on determinants and indicate that tax aggressive firms issue less transparent and less comprehensive disclosures. Apparently, information on the geographic distribution of MNEs' activities is meaningful with regard to tax avoidance.

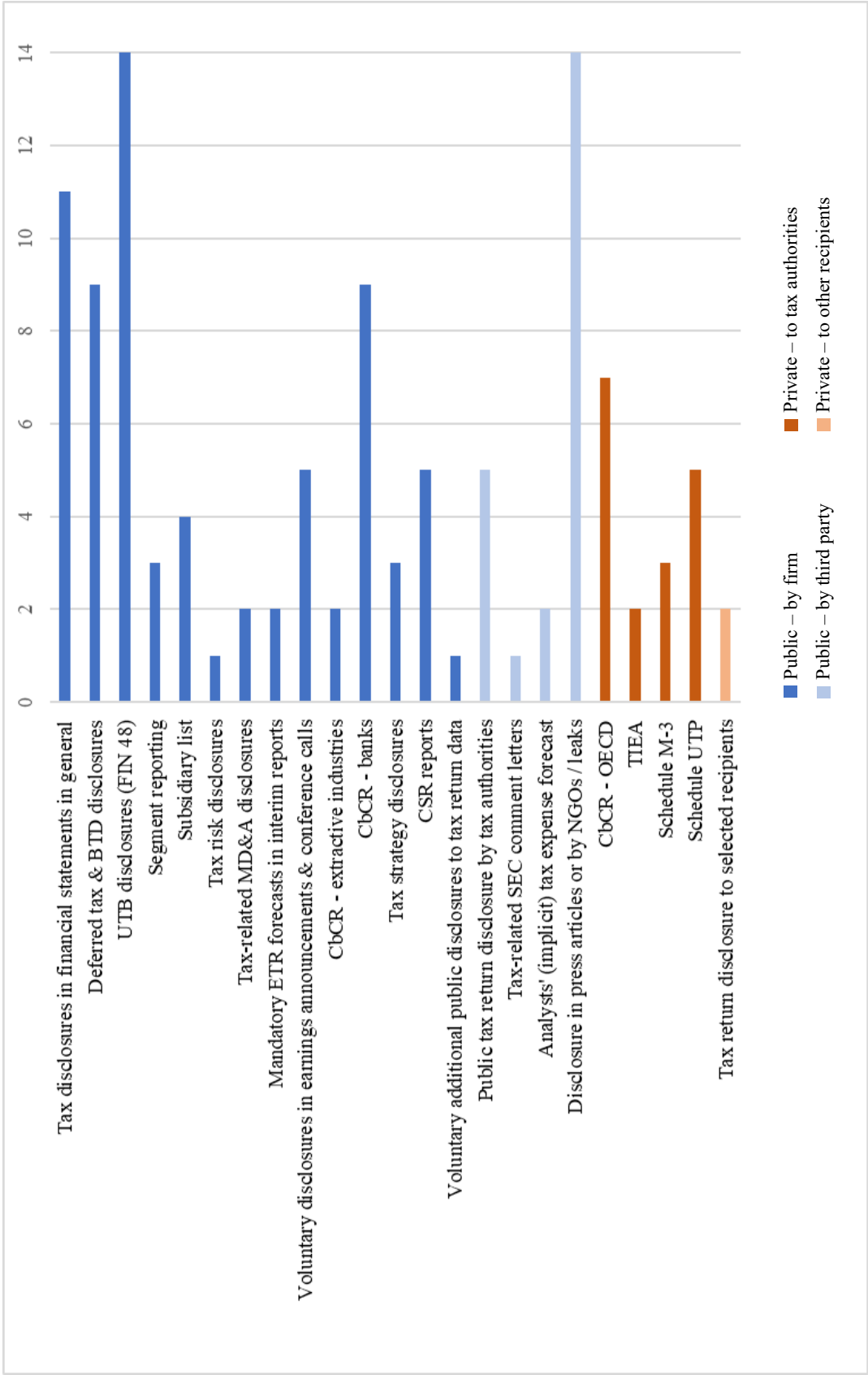
Among the more specific tax-related disclosures, most studies focus on the different CbCR regulations. While the public CbCR regulation for extractive industries appears to be effective in fighting corruption and increases the extraction payments of affected firms, these consequences are not directly related to tax transparency. Regarding the public CbCR requirement for banks in the EU, evidence on reactions is only modest. Studies document that banks reduce profit shifting and close tax haven subsidiaries, but the results on overall tax avoidance are inconclusive. Stock prices do not exhibit a significant investor response to the adoption of the rule. Surprisingly, the effects are more pronounced for the implementation of

the OECD's confidential CbCR, with consistent findings of a reduction in profit shifting and overall tax avoidance as well as real effects, namely the relocation of investments and employment. Due to the more comprehensive list of reportable items, the OECD's CbCR might be more informative for tax authorities than banks' disclosures. Alternatively, industry-specific particularities among financial institutions may explain the results.

Turning to qualitative publications by firms, first analyses of tax strategy reports suggest that the reports of some firms could be rather uninformative owing to the use of boilerplate language. While a few studies investigate the determinants of voluntary tax disclosures in CSR reports, there is virtually no evidence on whether these disclosures are informative and whether recipients find them valuable. In this context, the recent issuance of a separate standard on taxes within the most widely adopted framework for sustainability reporting (GSSB, 2019a) may spur upcoming research. Similarly, the informativeness and utilization of other tax-related qualitative disclosures (e.g., in MD&A and risk factor reports) offers opportunities for future research exploiting textual analysis techniques.

Studies exploiting settings of public tax return disclosure regimes provide mixed results on the effects. Firms obviously anticipate impending costs and try to prevent being subject to the rules. However, they do not seem to change their tax avoidance behavior. Investor reactions are rather weak and inconclusive, and negative impacts on consumer perception are limited to certain groups of firms. It has to be noted, though, that the respective studies are necessarily confined to single-country settings. Considering the institutional differences, it is difficult to compare the results from different countries.

Figure 4: Number of Empirical Studies on Tax Transparency by Disclosure Type



Notes: Figure 4 depicts the number of empirical studies on tax transparency by disclosure type. We include all studies on tax transparency which we refer to in our review of the empirical literature (Sections 2.4-2.6) and/or which are summarized in Appendix 2. Studies investigating multiple disclosure types are counted multiple times.

Third-party disclosures in press articles or by NGOs and leaks constitute a distinctive type of public tax-related disclosure, as firms usually cannot influence their occurrence and content. They often exhibit a negative wording (“shaming”) and entail a shock in public scrutiny. Due to these features, such settings are appealing to examine the effects of increased attention to a firm’s tax behavior. However, as summarized above, empirical evidence does not suggest that potential reputational damages influence the demand for a firm’s products or services. Accordingly, extant studies mostly fail to find notable overall responses of firms and investors to disclosures in press articles or by NGOs and leaks.

A few studies investigate the introduction of private disclosures requirements to tax authorities in the US settings of Schedule M-3 and Schedule UTP. Their results do not provide support for the effectiveness of these rules, as they indicate only small adverse investor reactions and no reduction in the overall level of tax avoidance. Nevertheless, both settings – especially Schedule UTP – are interesting as the information to be privately reported to tax authorities is closely linked to items publicly disclosed in financial statements. Several studies document that different disclosure requirements interact, e.g., the introduction of Schedule UTP changes firms’ disclosure behavior with regard to UTBs in financial statements.

In this vein, we look forward to research on interaction effects in other regulatory settings, e.g., whether the introduction of a confidential CbCR requirement affects MNEs’ public segment reporting or subsidiary disclosure. Similarly, future studies could further examine whether the adoption of mandatory reporting rules influences voluntary disclosure behavior and, if so, whether mandatory and voluntary disclosures act as complements or substitutes. We note that tax accounting researchers should have comparative advantages in this area due to their knowledge of the institutional backgrounds.

Finally, when comparing the empirical findings by disclosure type with the classification outlined in Section 2.2.2, it is striking that we lack research on the effects of regimes requiring the private disclosure of certain tax planning arrangements to tax authorities. This is surprising

in light of the considerable number of countries which have implemented such a rule within the last two decades.⁷⁶ Future research may investigate how firms and investors react to these regimes (and, conditional on data availability, how tax authorities use the information). It could also be interesting to shed light on how the typical promoters of tax planning arrangements – tax advisors and financial intermediaries – are affected. The recent introduction of DAC 6 in the EU member states offers a promising cross-country setting to examine these questions.

Despite the rapidly growing number of studies, our review has demonstrated that we are still only at the beginning of empirical research on tax transparency. Many open questions remain. To conclude, we briefly list the directions that we have identified as particularly interesting for future research: (1) The development of a comprehensive theoretical framework incorporating the different incentives which influence tax disclosure decisions; (2) the role of managers and tax executives in corporate decisions on tax transparency and the interrelation with simultaneous tax planning decisions; (3) interaction effects between public and private disclosure requirements or between mandatory and voluntary disclosures; (4) the informativeness and reception of qualitative tax-related disclosures (e.g., in CSR reports according to the GRI framework or tax strategy reports); (5) combinations and comparisons of the different information about tax behavior contained in various types of (quantitative and qualitative) disclosures and development of more nuanced measures of tax avoidance; (6) the effects of the introduction of regimes requiring the private disclosure of tax planning arrangements; and (7) the processing of the available tax-related information by investors, analysts, consumers, and tax authorities, including the impact on their decision-making and actions.

⁷⁶ See Section III.B of Appendix 1 for an overview.

3 The Effect of a Tax Compliance Label on Consumers in the Sharing Economy⁷⁷

3.1 Introduction

Over the last two decades, we have witnessed a massive digitalization of our economy and society. As part of this development, we have seen the birth and rise of the so-called “sharing economy” (Sundararajan, 2016; Teubner & Hawlitschek, 2018), in which idle resources are efficiently shared among different user groups. Peer-to-Peer (P2P) platforms are considered particularly interesting in terms of user uptake, revenues, and firm value (Zijm et al., 2019).⁷⁸ These platforms facilitate the exchange of goods and services between mostly private providers and consumers in various segments (e.g., accommodation, retail, mobility, Ma et al., 2017; Resnick & Zeckhauser, 2002; Teubner & Flath, 2015). One of these key sectors is P2P accommodation sharing (European Commission, 2016). Airbnb, the most prominent player within this domain, provides listings from over 220 countries and regions and estimates to have facilitated over 500 million stays since its founding in 2008.⁷⁹

Besides their increasing economic relevance, platform businesses are blamed for causing several economic and societal problems. For the prominent example of P2P accommodation sharing, the most pressing concerns include local side effects such as over-touristification (Oskam & Boswijk, 2016), ever-increasing rent prices (Gurran & Phibbs, 2017), and illegal hospitality operations (Schäfer & Braun, 2016).

Furthermore, P2P sharing platforms are criticized for facilitating illegal tax evasion by service providers (e.g., hosts) who are suspected of under-reporting their income earned via

⁷⁷ This section is joint work with David Dann, Ann-Catherin Werner, Timm Teubner, Alexander Mädche, and Christoph Spengel. It has been published in the *Journal of Information Systems and e-Business Management* (ISEB), Vol. 20, Issue 3, September 2022, pp. 409-439. We thank two anonymous reviewers as well as Philipp Dörrenberg and Florian Hawlitschek for helpful comments and suggestions. This work was partially supported by the research alliance ForDigital (fordigital.org), an initiative encouraged and funded by the Federal State of Baden-Württemberg, Germany.

⁷⁸ The worldwide gross volume generated by the platform-driven gig and sharing economy is estimated to grow to USD 455 billion by 2023, doubling the gross volume of USD 204 billion in 2018 (Mastercard & Kaiser Associates, 2019).

⁷⁹ See <https://news.airbnb.com/fast-facts/> (accessed on September 16, 2022).

such platforms (Bloomberg, 2020; Financial Times, 2020). Tax authorities, on the other hand, lack the proper resources to monitor the plethora of online transactions realized on the platforms effectively, thereby rendering tax enforcement costly and inefficient (Elliot, 2018). In light of the volume of tax revenues at stake, ensuring tax compliance⁸⁰ is one of the most salient public interests in the platform economy (Frenken et al., 2019) and has been identified as one of the major regulatory challenges policymakers are concerned with (OECD, 2019).

Prior research has mainly focused on quantifying the extent of non-compliance on P2P platforms (Bibler et al., 2021; Wilking, 2020). Tax losses stemming from tax evasion are substantial. In the US, for instance, less than 25% of all Airbnb providers are assumed to meet local tax obligations (Bibler et al., 2021). While tax evasion appears to be widespread among service providers on P2P platforms, it is unclear whether providers' tax behavior constitutes a relevant factor for platform consumers and influences their overall intention to enter transactions.

Against this backdrop, we provide insights from an experimental study on whether consumers actually value tax compliance on sharing platforms. More precisely, our research question is whether publicly communicated tax compliance increases consumers' trust towards the service provider and, in turn, their intentions to book at the tax-compliant provider. Understanding consumer reactions to tax behavior on sharing platforms is essential for two reasons. First, providers may face mistrust from prospective customers if they are suspected of engaging in tax evasion. This threat is particularly pronounced for the platform economy, where both market sides (i.e., hosts and guests) critically hinge on each other's activity and trust (McAfee & Brynjolfsson, 2017). Second, beyond the scope of sharing economy platforms, the idea of holding taxpayers publicly accountable has gained considerable momentum in recent

⁸⁰ Here, tax compliance describes the decision of the income-earning individuals to declare their income truthfully and to pay the respective amount of taxes on that income, in accordance with applicable tax laws (Mascagni, 2018; Slemrod, 2019).

years, as evidenced by the discussions around public tax transparency measures (Lagarden et al., 2020; Oxfam, 2020).

We address our research question by means of a scenario-based online experiment ($n = 286$). Participants take the role of consumers on an accommodation sharing platform, evaluate a set of available listings and thus, implicitly, the associated providers. To make the providers' tax behavior salient to consumers, we introduce a visual label that is granted to tax compliant providers (tax compliance label) in the experiment. This tax compliance label allows us to directly examine consumers' reactions to publicly assured tax honesty.

In the domain of P2P sharing, platform operators implement several reputation mechanisms to address trust-related aspects (for a thorough review on the role of trust on platforms, see Soleimani (2021)). Visual labels (often referred to as “badges”) aim to propagate specific qualifications or service quality standards that are otherwise unobservable for consumers (Dann et al., 2019; Hesse et al., 2020). From a theoretical perspective, labels function as a signal to bridge information asymmetries between providers and consumers (Spence, 1973). Studies document that the information inherent to these labels translates into increased levels of trust in providers (Teubner & Hawlitschek, 2018), increased willingness to pay for offers from such providers (Abramova et al., 2017; S. Liang et al., 2017), as well as the resulting number of actually ensuing transactions (Ke, 2017). We hypothesize that tax compliance signals advantageous qualities such as integrity and honesty, strengthening a provider's trustworthiness in the eyes of prospective consumers and their willingness to book at tax-compliant providers.

In addition, the public commitment to tax honesty allows consumers to draw inferences on the providers' moral values and beliefs. Tax evasion is a controversial topic and generally perceived as “immoral” or “unethical” (Kirchler et al., 2003). Importantly, it contradicts the claim of the sharing economy to foster a fair and sustainable economy (Martin, 2016). Tax compliance, in contrast, relates to socially-oriented values that emphasize cooperative and

supportive behavior within society (Schwartz, 2012). Personal values and moral beliefs are important determinants for individuals' behavior (Bergquist et al., 2019) and influence their economic decision-making (Antonetti & Anesa, 2017; Frey & Torgler, 2007). Therefore, we expect that consumers' moral norms moderate the effect of the tax compliance label to the extent that the perceived values of the provider match with consumers' own preferences.

The results of our analysis indicate that consumers do indeed embrace providers' tax behavior in the process of selecting listings. In particular, we find that a visual tax compliance label positively influences participants' trust in a provider. In line with prior research (Teubner & Hawlitschek, 2018), this positive effect also translates into increased booking intentions with regard to such tax-compliant providers. Moreover, consumers' moral norms take a moderating role in both the trust-fostering effect of the tax compliance label and the positive impact of trust on consumers' willingness to enter a transaction. We supplement our findings with qualitative insights into participants' perceptions of tax-compliant providers based on open-ended (textual) responses.

With our study, we contribute to two major streams of the literature. A nascent but growing body of research focuses on quantifying and explaining tax evasion on income earned via digital platforms (Berger et al., 2020; Bibler et al., 2021; Wilking, 2020). We build on this research by adding the consumer perspective. To the best of our knowledge, this study represents the first to examine consumers' reactions to an indication of the tax behavior/honesty of P2P accommodation sharing providers. Our results suggest that providers may actually benefit from signaling tax honesty. Moreover, the outlined research question also resonates with prior studies on consumer reactions to aggressive (but legal) corporate tax planning (Asay et al., 2018; Gallemore et al., 2014; Hardeck et al., 2021). However, we assess consumer reactions to tax behavior in the sharing economy, where the consumers interact with real peers (i.e., individuals) rather than companies.

Second, our results address the broader public debate on tax justice and taxing the emerging digital business models. Tax transparency is gaining ground with legislators responding to the growing demand to hold taxpayers publicly accountable for their tax contribution (KPMG, 2021). Our findings provide support to the notion that consumers may reward publicly communicated tax honesty on P2P platforms. Thus, increasing tax transparency on sharing platforms may constitute a cost-efficient regulatory mechanism for policymakers. We, therefore, discuss how the label may be awarded to ensure high credibility and to keep administrative efforts at a minimum. In particular, a voluntary information sharing system with tax authorities as used in Estonia could be implemented to certify tax compliant service providers (Ogembo & Lehdonvirta, 2020). Under this scenario, service providers have the free choice to signal their tax honesty on sharing platforms.

3.2 Related Work and Research Model

3.2.1 Tax Evasion in the Platform Economy

The recent scandals about secret offshore activities (e.g., Lux Leaks, Panama Papers) have increased public awareness for tax-related misconduct. Despite legislators' efforts to ensure tax compliance, certain areas still provide opportunities to evade taxes at low detection risks. Regarding the sharing economy, the key tax challenge consists of taxing service providers' income. On virtually all sharing platforms, service providers are represented by individuals rather than companies. In the case of Airbnb, for instance, the income from letting an apartment or room is treated as rental income from immovable property, which is taxed at the personal income tax rate. Notably, providers are responsible for filing and reporting their income together with related expenses in their tax returns (Beretta, 2017).⁸¹

⁸¹ In addition to income taxes, most jurisdictions also levy consumption taxes (e.g., the value-added tax (VAT) in the EU) on the monetary consideration paid by the consumer to the provider for the provision of goods and services. If the annual turnover of the provider exceeds a certain threshold, the provider is obliged to register with national tax authorities and to account for VAT (Beretta, 2018).

However, self-reported income is susceptible to manipulation (Alm et al., 2009; Kleven et al., 2011). Taxpayers may either report low or no income from renting activities at all. The traditional economic model predicts that the level of tax compliance depends on perceived detection probabilities and penalties (Allingham & Sandmo, 1972). In the sharing economy, tax authorities typically lack information on the numerous online transactions between private providers and consumers. Monitoring providers through audits requires substantial resources and renders tax enforcement particularly burdensome (Elliot, 2018). As a result, the overall detection probability of misreporting is relatively low. Besides anecdotal evidence on dishonest tax reporting covered by the media (Bloomberg, 2020; Financial Times, 2020; WirtschaftsWoche, 2018), two recent empirical studies provide evidence that Airbnb providers do not report their total income in the absence of additional compliance mechanisms (Bibler et al., 2021; Wilking, 2020).

Moreover, the issue of misreporting appears to be rooted in the design of sharing platforms. Sharing platforms are often characterized as a pathway to a more sustainable and equitable economy (Martin, 2016). Berger et al. (2020) argue that the pro-social benefits associated with sharing activities liberate service providers to dishonestly report their earned income. According to their findings, tax evasion rates are higher among service providers whose personal values are not in line with the values of the platform.

However, dishonest tax reporting leads to several undesirable outcomes. First, non-compliant providers gain an unfair competitive advantage over honest providers as they can afford to demand lower prices. Similarly, such behavior distorts competition with traditional service providers such as the hotel industry, which is more regulated than sharing platforms (OECD, 2019). Second, tax evasion results in a substantial reduction of tax revenues. Foregone tax revenues narrow the scope of governments to finance public goods and services. Thus, tax evasion contradicts the sharing economy's sustainability narrative (Voytenko Palgan et al., 2017).

3.2.2 *Consumers' Perception of Providers' Behavior*

Demonstrating trustworthiness is essential for successful participation on P2P platforms (Loebbecke, 2003; Tussyadiah & Park, 2018). Studies have shown that trust in a prospective transaction partner is a crucial factor and that a lack of trust is likely to hinder the realization of any transaction (Hawlitschek et al., 2016; Soleimani, 2021). Unsurprisingly, major platforms explicitly state to “design for trust”⁸² and give providers the opportunity to establish a reputation on the platform and thus to showcase their trustworthiness. This reputation is of vital importance for providers as they have to market themselves via the platform to generate demand (Tussyadiah, 2016). To this end, platform operators make use of a variety of mechanisms such as star ratings or text review systems (Dann et al., 2020; Hesse et al., 2020).

Among the most successful trust-building artifacts are platform-specific visual labels. Typically, these labels are granted by platforms themselves and are intended to certify a user's superiority in terms of one or more value dimensions. The separating component of superiority may relate to different aspects. It may, for instance, indicate that the provider has demonstrated an exceptionally high level of service quality in the past (e.g., consistently high evaluations), has achieved a particular proficiency or achievement on the platform (e.g., long-term membership), or has been verified in some form (e.g., by means of an ID card).

Indeed, scholars show that consumers are willing to pay more for offers from such providers (Abramova et al., 2017; S. Liang et al., 2017). On Airbnb, for instance, the “Superhost” label attests that a provider fulfills excellent standards in the dimensions communication, commitment, guest satisfaction, and experience.⁸³ The effectiveness of such labels is undisputed and users state to perceive providers with the Superhost label as high-quality and to be willing to pay a price premium (S. Liang et al., 2017). Further empirical evidence reflects this pattern where quality labels appear to be a significant driver of prices

⁸² See https://www.ted.com/talks/joe_gebbia_how_airbnb_designs_for_trust (accessed on February 11, 2021).

⁸³ See <https://blog.airbnb.com/superhost/> (accessed on July 14, 2022).

(Ert & Fleischer, 2019; Gibbs et al., 2018; Kakar et al., 2018; Neumann & Gutt, 2017; Teubner et al., 2016; Teubner et al., 2017; Wang & Nicolau, 2017) and the amount of realized transactions (Ke, 2017).

Given that, as of today, no official nor otherwise visible verification of tax-compliant behavior is available, consumers cannot differentiate tax-compliant (i.e., honest) providers from non-compliant providers. Since, at the same time, individual tax evasion is perceived as immoral behavior (Frey & Torgler, 2007; Kirchler et al., 2003), a non-compliant tax behavior on P2P sharing platforms poses a risk to their general reputation – and hence to the sharing economy as a whole.

3.2.2.1 Signaling Theory

To provide a theoretical frame for the role of tax compliance labels in our study, we draw on signaling theory (Spence, 1973). The theory assumes markets with information asymmetry, for instance, between job seekers and employers or online vendors and customers. According to signaling theory, the more informed side (i.e., job seekers, sellers) can use signaling (or signals) to demonstrate their otherwise unobservable quality (e.g., talent, skill, intelligence, product quality, Basoglu & Hess, 2014).

One of the fundamental principles of signals is that they are inherently costly. Individual signaling costs depend on the underlying trait that the signal is intended to represent, that is, higher quality is associated with lower signaling costs for quality. This cost differentiation for high- and low-quality sellers causes a separating equilibrium in which it is only worthwhile for high-quality sellers to acquire the costly signal. The signal itself, therefore, becomes a separating factor.

Within the context of platforms and accommodation sharing in particular, similar informational asymmetries between providers and consumers exist. This aspect becomes particularly aggravated considering that most offers are run by private individuals rather than corporate hospitality providers (Ke, 2017). Traditional hotel chains typically build strong

reputation and brand awareness, which reduces uncertainty associated with the quality of the accommodation service. Public information on private service providers is, however, limited to the content published on the platforms.

In this sense, tax compliance labels constitute a signal of honesty, integrity, and a sincere interest in societal well-being and the common good through paying taxes (as credibly documented by the signal). The underlying premise here is that for honest and sincere providers, paying taxes represents a matter of course. For them, in the sense of the theory, providing this signal does not incur any additional costs since they would pay taxes in any case. For dishonest providers who would rather refrain from paying taxes on their rental revenues, in contrast, providing the signal (i.e., the tax compliance label) comes at a much higher cost, that is, the cost of actually paying the taxes.

To understand how signals of tax compliance manifest themselves in consumers' perceptions of providers and how this perception ultimately affects their willingness to enter into a transaction with them, our research model (see Figure 5) incorporates the dimensions of trust and moral norms. We argue that observing the signal increases providers' trustworthiness in the eyes of prospective customers. Assuming that tax-honesty is linked to honesty and benevolence in general, the observed tax-compliance signal is likely to serve as a proxy for other characteristics such as reliability and reasonable pricing. We approximate the transaction intention by means of customers' intention to book an offer on a P2P sharing platform. Since the positive association of trust and booking intentions has already and repeatedly been demonstrated by various studies (e.g., Hawlitschek et al., 2016; L. J. Liang et al., 2018; Mittendorf & Ostermann, 2017; Teubner et al., 2014; Teubner & Hawlitschek, 2018), we consider this positive relationship as given.

Existing literature shows that labels such as Airbnb's Superhost label can imply quality (S. Liang et al., 2017) and establish trust (Teubner & Hawlitschek, 2018). Providers seem to be well-aware of the effectiveness of these labels and claim to use them strategically (S. Liang et

al., 2017; Neumann & Gutt, 2017). Signaling theory in the context of tax compliance hence implies that labels are a necessary means to establish a separating equilibrium in which only the actual tax-compliant providers will bear the cost of acquiring the label. Hence, we hypothesize that a label for tax-compliant behavior constitutes a relevant signal that can promote consumers' perceptions of provider trustworthiness. Formally, our hypothesis states:

H₁: The presence of a tax compliance label has a positive effect on consumers' trust in the provider.

3.2.2.2 The Moderating Role of Moral Norms

Our first hypothesis establishes a link between providers' assurance of tax compliance and their trustworthiness in the eyes of prospective consumers. To better understand the relationship between the tax compliance label and consumers' responses, we next turn to a potential moderator of this effect. In particular, we examine whether consumers' moral norms on tax compliance influence their decision-making. Scholars have pointed out that "personal moral norms" are a relevant predictor for human behavior (Ajzen, 1991; Schwartz, 2012). Moral norms explain, to some extent, specific behavior that cannot be traced back to merely rational, cost-benefit considerations (Botetzagias et al., 2015; Frey & Torgler, 2007; Wenzel, 2004). Moreover, moral norms reflect the personal feelings of moral obligation or responsibility to perform a particular behavior (Ajzen, 1991). In this regard, Schwartz (2012) postulates that a person's evaluation of moral norms is based on its individual values. Consequently, personal values affect how inclined we are to accept or reject a particular norm.

Moral norms, however, do not only prescribe desirable behavior for oneself. Ethical expectations are also used to assess the observed behavior of others. For instance, several studies conclude that consumers' reactions to CSR activities depend on the extent to which consumers identify with the company (Bhattacharya & Sen, 2004; Sen & Bhattacharya, 2001). Sen and Bhattacharya (2001) suggest that individual factors influence the perceived overlap

between their own and the company's character (as indicated by CSR activities). These individual factors relate to personality traits such as norms and values. The authors conclude that the perceived (value) congruence determines how consumers evaluate CSR activities (Sen & Bhattacharya, 2001).

In the context of tax compliance, tax morale may constitute an essential determinant of the level of congruence. Hardeck and Hertl (2014), for instance, provide evidence that consumers' individual moral norms moderate the relationship between corporate tax behavior and corporate reputation. Consumers who disapprove tax evasion evaluate tax minimizing companies more negatively. Moreover, consumers' evaluation of a company's tax behavior is strongly linked to their personal attitudes towards taxation (Antonetti & Anesa, 2017). These findings suggest that consumers reflect on the observed tax behavior based on their own moral standards and adjust their evaluation of the company accordingly.

We build on the congruence argument to conceptualize the interaction of moral norms with the tax compliance label. While we acknowledge that findings on consumer reactions to corporate behavior do not necessarily apply to a setting in which consumers interact with peers rather than companies, the same mechanism may – to some extent – govern consumer behavior on P2P platforms. Two factors support this assertion. First, information about a person's tax compliance does affect the overall perception of that person. Confronted with different types of tax behavior (e.g., tax honesty, tax flight, and tax evasion), people consider tax evasion immoral and unfair towards society (Kirchler et al., 2003). Kasper et al. (2018) document that people attribute positive characteristics to honest taxpayers whereas tax evaders are judged least favorable and described as “aggressive” and “uncooperative”. Second, participants in the sharing economy place a higher weight on socially-oriented values than the overall population (Piscicelli et al., 2015; Piscicelli et al., 2018). Therefore, they are likely to be more concerned about irresponsible, anti-social behavior such as tax evasion.

Applying Schwartz's theory of basic values (Schwartz, 2012; Schwartz et al., 2012) to our setting, the tax compliance label signals two socially-oriented values: conformity to rules and universalism. People who consider tax compliance as a moral obligation are likely to share a preference for conforming to rules. The second value refers to the protection and appreciation of the societal welfare and of nature and is in accordance with the general promise of the sharing economy of building a more sustainable and fairer economy.

For the context of this study, where non-compliance is virtually equivalent to tax evasion, we therefore expect that consumers considering tax compliance as a moral obligation towards society perceive strong congruence with providers holding a signal of tax-compliant behavior:

H₂: The effect of the tax compliance label on trust in the provider is stronger if tax compliance is in line with consumers' moral norms.

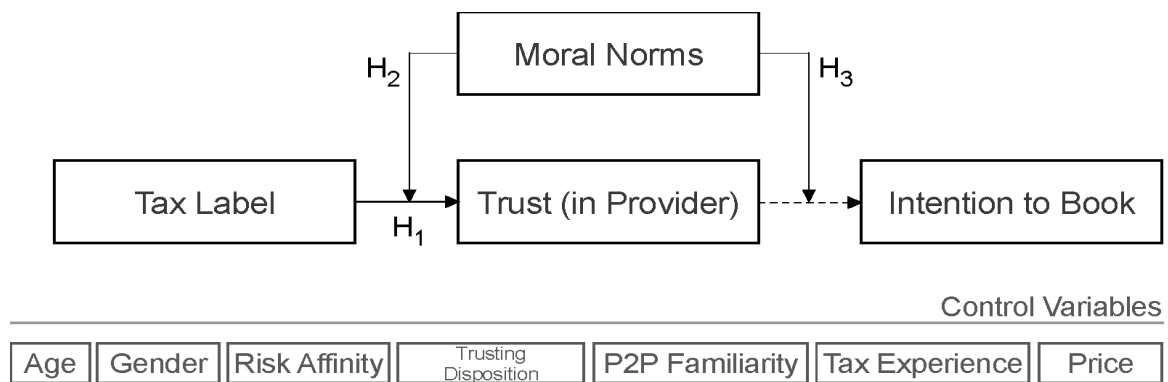
Apart from reputational aspects, moral norms also frame actual behavior. For instance, studies on pro-environmental behavior show that norms may help to address environmental problems (e.g., Bergquist et al., 2019). Beyond pro-environmental behavior, moral norms also affect economic decision-making. A large body of literature confirms the positive effect of tax morale (i.e., the perceived moral obligation to pay taxes) on personal tax compliance decisions (Alm & Torgler, 2006; Frey & Torgler, 2007; Wenzel, 2004).

Moreover, moral norms seem to moderate consumers' willingness to enter into economic transactions with companies (Antonetti & Anesa, 2017). Participants with a negative attitude towards legal tax planning exhibit both lower purchase intentions and a reduced willingness to pay for a product of a company that was associated with corporate tax planning (Hardeck & Hertl, 2014). These findings are in line with the results of Asay et al. (2018) – participants that are aware of specific incidents of dubious corporate tax practices claim to have declined to purchase from those companies.

To summarize, consumers prefer providers whose presumably observable behavior (i.e., tax compliance) is in line with their moral norms and what they think is the right thing to do (Klößner, 2013). We thus hypothesize:

H₃: The effect of trust in the provider on intention to book is stronger if tax compliance is in line with consumers' moral norms.

Figure 5: Research Model



Notes: Figure 5 illustrates the research model and the control variables included in the analysis.

3.3 Method

We evaluate our research model (see Figure 5) by means of a scenario-based online experiment. Participants act as consumers on a P2P accommodation sharing platform and consider a set of listings from different providers. Employing a treatment-based experiment allows for a high degree of control and, at the same time, for making causal claims on the exogenous treatment variables' effects (i.e., presence of tax compliance labels) (Friedman et al., 2004).

3.3.1 Scenario and Treatment Design

Participants face the following scenario. They are looking for a place to stay in a foreign city for two nights for themselves and a friend. For this trip, they are looking for a suitable accommodation on a P2P sharing platform. Their friend has already pre-selected one of five

Table 2: Stimulus Elements

Element	Manipulation
Amenities	Constant for each listing – private room in apartment: 2 guests, 1 bedroom, 1 bed, WiFi, kitchen, washer
Images	Randomly drawn (without replacement) for each listing and participant from set of five blurred images of real Airbnb listings
Titles	Randomly drawn (without replacement) for each listing and participant from set of five blurred titles from real Airbnb listings
Star Rating	Randomly drawn for each listing and participant 4.5 or 5 stars. The selection always has 5 stars
#Ratings	Randomly drawn for each listing and participant between 14 and 17 – aligned towards the 75-percentile of comparable Airbnb listings
Tax Compliance Label	Treatment-based: Either the pre-selection and one other random listing has the label or the pre-selection has no label and two other random listings have it
Price	Randomly drawn (without replacement) from a set of five prices – aligned towards the 25-, 50-, and 75-percentile of comparable listings on Airbnb. The pre-selected listing either has the 25- or the 75-percentile price

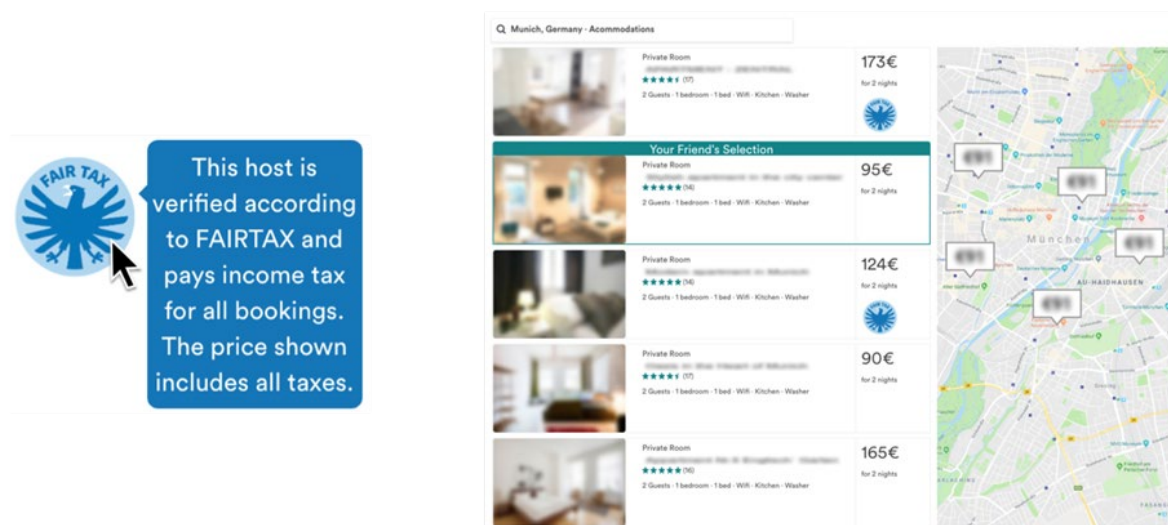
Notes: Table 2 presents the stimulus elements employed in the experiment.

available listings of different configurations (see Table 2), and they are now in charge of evaluating this pre-selected listing in terms of how likely they would be to actually book it. The treatment design manipulates the configuration of the pre-selected accommodation such that the listing either has a tax compliance label or not (binary treatment design). Each participant is assigned to either one or the other treatment condition (between-subjects design). To ensure a high degree of comparability between treatments, two out of the five listings have the tax compliance label, while the other three do not. Depending on the treatment condition, the pre-selected listing is either one of the two with the label, or one of the three without.

3.3.2 Stimulus Material

To create an engaging scenario and to mimic an actual search/booking process as realistically as possible, we visually align the stimulus material with that of popular accommodation sharing platforms such as Airbnb (see Figure 6; right). After being welcomed and having read the scenario description, participants are forwarded to the overview page, showing the five listings, including their friend's pre-selection. Each listing's rating is randomly set to either 4.5 or 5.0 stars, and the number of ratings is randomly chosen between 14 and 17.⁸⁴ In order to prevent any inferences about the merits or drawbacks of individual listings (e.g., information about location or amenities), titles, descriptions, pictures, and the location markers are blurred.

Figure 6: Tax Compliance Label and Scenario



Notes: Figure 6 illustrates the tax compliance label stimulus with mouse hover (left) and an exemplary screenshot of the overall stimulus in the experiment (right).

3.3.2.1 Tax Compliance Label

Since tax compliance labels are not (yet) used by any major platform, we created such a label based on the following considerations (Figure 6; left). Given the scenario is set in Germany and also the sample is recruited from Germany, the label uses typical design elements

⁸⁴ Thereby, we align the number of ratings towards the actual distribution of Airbnb listings, available at <http://insideairbnb.com/> (accessed on September 16, 2022) (Dann et al., 2019; Ke, 2017).

associated with German Federal Ministries (i.e., the federal eagle). Regarding color, the design is mainly kept in blue tones, following Sundar and Kellaris' (2016) emphasis of color symbolism. During the experiment, participants were able to mouse over the label to see an explanation about its meaning, stating: "This provider is verified according to FAIRTAX and pays income tax for all bookings. The price shown includes all taxes."

3.3.2.2 *Prices*

For prices, we select five different price levels, derived from the 25-, 50-, and 75-percentiles of comparable listings on Airbnb (Teubner et al. 2017). Rounded to the nearest integer, we thereby generate the following set of prices: (1) 25-percentile -5%: €90, (2) 25-percentile: €95, (3) 50-percentile: €124, (4) 75-percentile: €165, and (5) 75-percentile +5%: €173. These five prices are allocated to the five listings at random, whereby we ensured that the pre-selected listing is either associated with 25- (low) or 75-percentile (high) price (i.e., not with any of the "extremes").

3.3.3 *Measures*

All measurement instruments of this study are based on validated scales. We adapt the operationalization of intention to book (ITB) from Gefen and Straub (2003), moral norms (MN) from Botetzagias et al. (2015), and trust in provider (TIP) from Pavlou and Gefen (2004). All items were measured on 7-point Likert scales. Beyond these constructs, we survey demographic traits as control variables. These included age, gender, individual risk propensity (Dohmen et al., 2011), general trusting disposition (DTT) (Gefen & Straub, 2004), familiarity with P2P platforms (Gefen & Straub, 2004), and tax experience. All measurement instruments are listed in Appendix 3 and Appendix 4.

3.3.4 *Procedure and Sample*

Participants were recruited from the student subject pool at a large German university using the software *hroot* (Bock et al., 2014). We incentivize participation by monetary rewards (€10.26 per hour and person on average). The median time spent in the experiment was 9.1

Table 3: Sample Demographics

Trait	All		Treatment (n = 141)		Control (n = 145)	
	Mean	Range	Mean (SD)	Range	Mean (SD)	Range
Female	0.343		0.333		0.352	
Tax Experience	0.552		0.553		0.552	
Age	23.6 (3.91)	18-59	23.8 (4.33)	18-59	23.3 (3.45)	18-37
Risk Affinity	4.96 (1.85)	0-10	5.09 (1.84)	0-8	4.83 (1.85)	0-10

Notes: Table 3 summarizes the sample characteristics for the treatment and the control group.

minutes, and 362 participants started the experiment. From those, 286 participants passed all attention checks and finished the experiment completely. The resulting sample size is well above the threshold of samples needed for most applications (Cohen, 1992; Hair et al., 2017).

We summarize all sample characteristics in Table 3. Within the sample, 34.3% are female, average age is 23.57 years (Standard Deviation (SD) = 3.91) with a minimum of 18 and a maximum of 59 years. Average risk affinity (scale from 0 to 10) is 4.96 (SD = 1.85). Overall, 55.2% of participants state to have experience declaring (their own or someone else's) taxes.

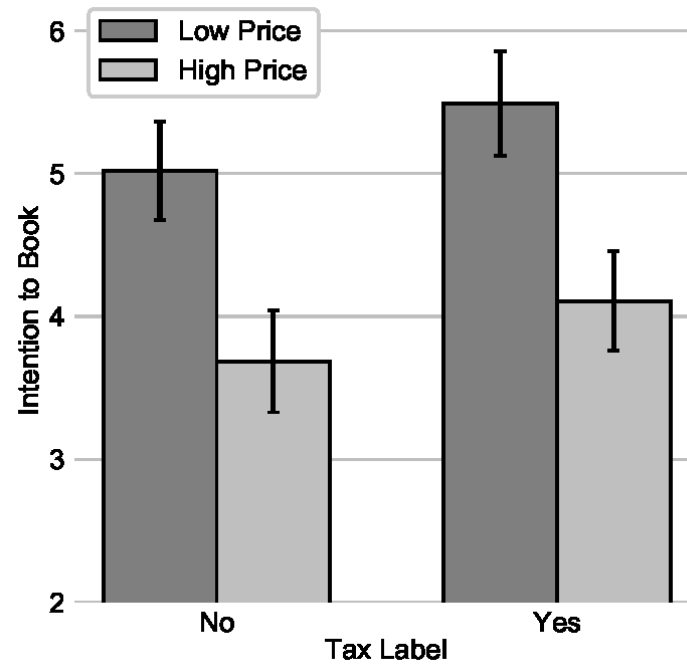
3.4 Results

First, we analyze the tax compliance label's overall effects on intention to book (see Figure 7). A 2 (label: yes, no) \times 2 (price: high, low) Analysis of Variance (ANOVA) reveals significant effects for both the tax compliance label ($F(1, 283) = 7.88, p = 0.005$), and price ($F(1, 283) = 94.82, p < 0.001$), and no significant second-order interaction effects. The subsequent post-hoc analysis (TukeyHSD) confirms the significant differences for both tax compliance label ($D_{LAB-NO_LAB} = 0.391, p = 0.005$) and price ($D_{LOW-HIGH} = -1.36, p < 0.001$). Table 4 summarizes these main effects.

Table 4: Main Effects on Intention to Book

Artifact	Yes		No	
	Mean (SD)	95% CI	Mean (SD)	95% CI
Tax Compliance Label	4.77 (1.29)	0.215	4.38 (1.42)	0.233
Low Price	5.24 (1.14)	0.190	3.90 (1.24)	0.206

Notes: Table 4 summarizes the main treatment effects on intention to book.

Figure 7: Main Treatment Effects

Notes: Figure 7 displays the main treatment effects. Error bars indicate 95% confidence intervals.

3.4.1 Measurement Model

To initially explore the underlying structure of the measurement instrument, we conduct an Exploratory Factor Analysis (EFA) (Reio & Shuck, 2015). The EFA uses the Maximum Likelihood procedure and Promax Rotation resulting in an acceptable four-factor model with all factor loadings greater than 0.50. Table 5 lists the adequacy measures. Table 6 provides the corresponding pattern matrix. Item-level descriptives are provided in Table 7. We summarize construct descriptives, correlations, and reliability measures in Table 8. We ensure internal consistency by confirming that all constructs fulfill the thresholds of 0.70 for Cronbach's α (CR α) and composite reliability (Bagozzi & Yi, 1988).

Table 5: Adequacy Measures

Adequacy Measure	Value
Kaiser-Meyer-Olkin	0.813
Bartlett's Test of Sphericity	0.000
Communalities	0.572
Non-redundant Residuals	8 (6%)
Total Variance Explained	67.3%

Notes: Table 5 summarizes the adequacy measures.

Table 6: Pattern Matrix

Item	Factor			
	DTT	MN	TIP	ITB
ITB1				0.725
ITB2				0.702
ITB2				0.823
MN1		0.963		
MN2		0.695		
MN3		0.691		
TIP1			0.649	
TIP2			0.611	
TIP3			0.686	
TIP4			0.694	
DTT1	0.854			
DTT2	0.518			
DTT3	0.762			
DTT4	0.821			
DTT5	0.913			
DTT6	0.768			

Notes: Table 6 summarizes the pattern matrix of the items.

Table 8: Item Descriptives

Item	Mean	St. Dev	Skewness	Kurtosis
ITB1	4.09	1.75	-0.200	-1.13
ITB2	5.09	1.51	-0.862	0.006
ITB3	4.52	1.65	-0.426	-0.917
MN1	4.34	1.78	-0.396	-0.913
MN2	5.26	1.56	-0.109	0.618
MN3	3.94	1.84	-0.063	-1.19
TIP1	4.74	1.15	-0.422	-0.097
TIP2	4.22	1.25	-0.218	-0.542
TIP3	4.38	1.12	0.003	0.810
TIP4	4.58	0.998	-0.246	0.741

Notes: Table 8 displays the descriptive statistics for the items.

Next, we confirm convergent validity by validating that all Average Variance Extracted (AVE) values exceed the 0.50 threshold (Hair et al., 2011). Regarding discriminant validity, the Fornell-Larcker criterion (Fornell & Larcker, 1981) is met, and we observe no influential cross-loading values in the pattern matrix (see Table 6).

Table 7: Construct Descriptives, Reliability Measures, and Correlations

	Mean (SD)	Comp. Rel.	CR α	AVE	Correlation matrix			
					ITB	MN	TIP	DTT
ITB	4.57 (1.37)	0.875	0.788	0.700	0.837	0.154	0.304	0.117
MN	4.51 (1.49)	0.881	0.821	0.714		0.845	0.013	0.142
TIP	4.48 (0.859)	0.840	0.716	0.636			0.798	0.366
DTT	4.48 (1.12)	0.921	0.896	0.665				0.816

Notes: Square roots of AVE are displayed on the diagonal of the correlation matrix.

3.4.2 Confirmatory Factor Analysis

We proceed with the Confirmatory Factor Analysis (CFA) using AMOS 26⁸⁵. We follow the guidelines of Hair et al. (2017) to determine the factor structure within our data and to test our hypotheses. To assess assumptions of multivariate normality, we confirm values within the range of ± 2.2 for both skewness and kurtosis (see Table 7; Skarpness, 1983). For all models, we compare model fit by means of five fit indices, following the guidelines and thresholds of Hu & Bentler (1999).⁸⁶ For our initial model, we observe $\chi^2 = 161.7$, $p < 0.001$, $\chi^2/\text{Degrees of Freedom (DF)} = 2.61$, Comparative Fit Index (CFI) = 0.941, Standardized Root Mean Square Residual (SRMR) = 0.052, Root Mean Square Error of Approximation (RMSEA) = 0.075, PClose = 0.002, indicating an insufficient model fit (particularly regarding the PClose value). Based on the standardized residual covariances, we decided to drop DTT3 for the subsequent analysis. The resulting model achieves good model fit regarding all fit measures: $\chi^2 = 145.4$, $p < 0.001$, $\chi^2/\text{DF} = 1.73$, CFI = 0.965, SRMR = 0.054, RMSEA = 0.051, PClose = 0.452.

3.4.2.1 Measurement Model Invariance

To ensure that the observed factor structure and loadings are equal across groups, we run invariance tests using a gender-based participant split. The model shows good fit, when assessed with both groups unconstrained ($\chi^2 = 332.2$, $\text{DF} = 196$, $\chi^2/\text{DF} = 1.695$, CFI = 0.934, SRMR = 0.061, RMSEA = 0.049, PClose = 0.527), confirming configural invariance. Next, comparing the measurement model to the unconstrained model, we observe no significant difference ($\chi^2 = 19.6$, $\text{DF} = 16$, $p = 0.237$), meeting the requirements for metric invariance (Schmitt & Kuljanin, 2008).

⁸⁵ See https://www.ibm.com/support/pages/downloading-ibm-spss-amos-26?mhsrc=ibmsearch_a&mhq=AMOS (accessed on June 30, 2019).

⁸⁶ The recommended thresholds are: $\chi^2/\text{DF} > 0.95$, CFI > 0.95, SRMR < 0.09, RMSEA < 0.05, and PClose > 0.05.

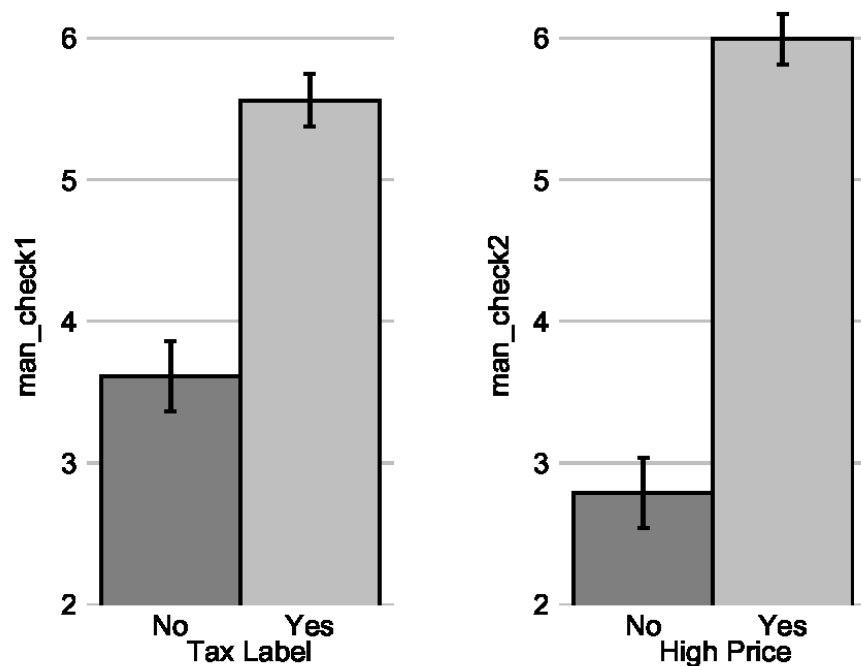
3.4.2.2 Common Method Bias

To account for potential Common Method Bias (CMB), we conduct a test of a unmeasured method factor (using a common latent factor) (Gaskin & Lim, 2017; Podsakoff et al., 2003). We find that the unconstrained model is invariant from the constraint to zero model (unconstrained model: $\chi^2 = 53.0$, DF = 98; zero constrained model: $\chi^2 = 90.0$, DF = 98; delta: $\chi^2 = 37.0$, DF = 588, $p > 0.999$). We conclude to observe no CMB and remove the unmeasured method factor for creating our factor scores.

3.4.2.3 Manipulation Check

To ensure that our externally manipulated treatment conditions are perceived as such by the participants, we included two manipulation checks in our survey (see Appendix 4). Figure 8 depicts the manipulation's effect on the respective items. The visual impression of a discernible difference in the means across the groups is supported by separate two-sided Mann-Whitney U tests showing significant difference for both the tax compliance label ($U = 3418.5$,

Figure 8: Manipulation Check



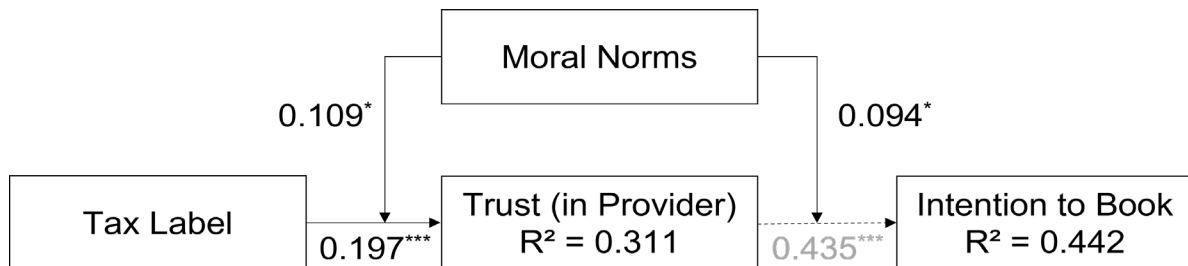
Notes: Figure 8 depicts the manipulation check for tax compliance label (left) and price (right). Error bars indicate the 95% level confidence intervals.

$p < 0.001$) and the price conditions ($U = 1287.0$, $p < 0.001$). Consequently, we conclude that the manipulation was successful.

3.4.3 Structural Model and Hypothesis Testing

We build our structural model using the composites imputed from the previously validated measurement model's factor scores. We validate the multivariate assumptions of the generated composites by evaluating Cook's distance values. We observe no values larger than 0.008 indicating no multivariate influential outliers (Aguinis et al., 2013). Regarding multicollinearity, all observed variance inflation factors are below the 3.0, and tolerance values above the 0.10 threshold, indicating no multicollinearity issues (O'Brien, 2007). The final model (see Figure 9) shows good model fit ($\chi^2 = 6.62$, $DF = 5.00$, $\chi^2/DF = 1.32$, $CFI = 0.994$, $SRMR = 0.020$, $RMSEA = 0.034$, $PClose = 0.595$), allowing us to interpret the estimated path coefficients.

Figure 9: Hypotheses Tests

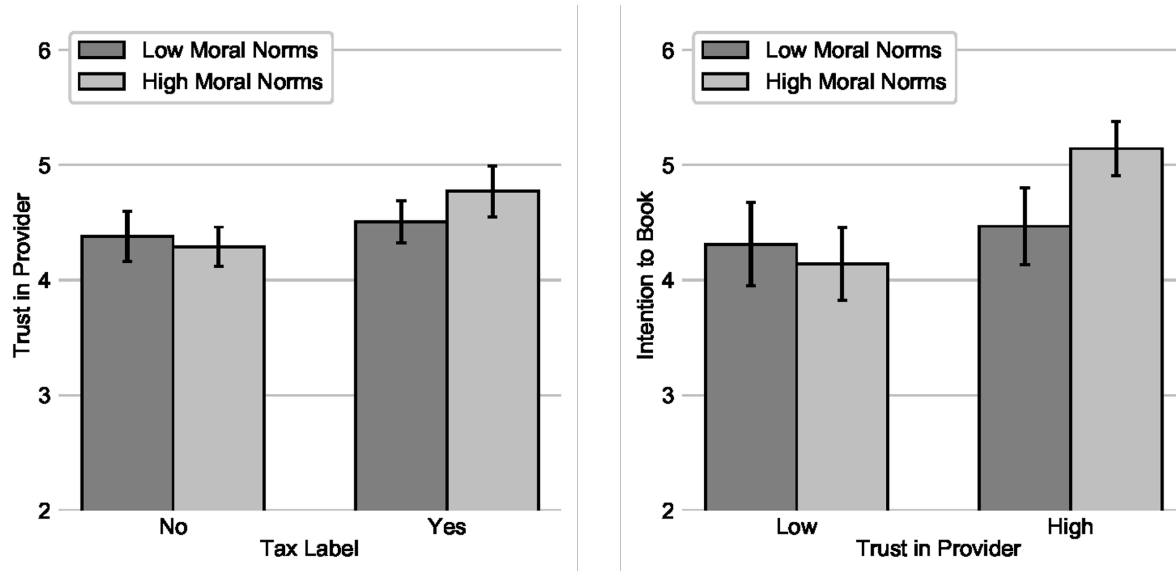


Notes: Figure 9 displays the structural model with standardized estimation results.

The model explains 44.2% of the variance in consumers' intention to book and confirms all hypothesized relations. We observe a positive and significant effect of the tax compliance label on trust in provider (H_1 , $\beta = 0.197$, $p < 0.001$). Further, this effect is stronger for consumers for which tax compliance is in accordance with their moral norms (H_2 , $\beta = 0.109$, $p = 0.026$). While the expected positive relationship between trust in provider and intention to book is also reflected in the model ($\beta = 0.435$, $p < 0.001$), it further shows that, consistent with our

hypothesis, this effect is stronger for consumers for whom tax compliance is in accordance with their moral norms (H_3 , $\beta = 0.094$, $p = 0.035$). Figure 10 depicts the moderation effects.

Figure 10: Moderation Effects



Notes: Figure 10 displays results for the moderating effects. The left part depicts effect of the interaction between moral norms and tax compliance label on trust in provider (H_2). The right part depicts the effect of the interaction between moral norms and trust in provider on intention to book (H_3). Continuous variables (moral norms, trust in provider) are split at the median. Error bars indicate 95% confidence intervals.

3.4.4 Control Variable Analysis

Next, we analyze the influence of the secondary variables on our structural model and hypotheses (see Appendix 3). The control variable analysis shows three significant effects. First, participants' overall trusting disposition positively affects trust in provider ($\beta = 0.504$, $p < 0.001$). Second, male participants show a lower level of trust in the provider ($\beta = -0.132$, $p = 0.007$). Third, the listing's price negatively influences booking intentions ($\beta = -0.441$, $p < 0.001$). Importantly, none of the control variables alters our findings in terms of magnitude, sign, or significance.

3.4.5 Monetary Equivalent of the Tax Compliance Label

The two employed price levels (see Table 2) allow us to calculate a monetary equivalent that participants assign to listings with the tax compliance label. Note that a price increase of €10 is associated with an average decrease of 0.194 on intention to book (7-point Likert scale).

Contrasting this to the difference in booking intention induced by the tax compliance label yields a first proxy for its monetary equivalent, which amounts to €23.12 ($\Delta = 0.450$).

3.4.6 Qualitative Assessment

To better understand participants' perception of the tax compliance label, we collected qualitative feedback from the experiment participants in the form of short free texts. Specifically, we asked participants to "please describe in your own words how the aspect of assuring tax compliance (i.e., the FAIRTAX label) has affected your evaluation of the selected listing." This inquiry yielded 286 responses, which we classify on three levels. First, we assess whether the tax compliance label was stated to have a general influence on participants' booking decisions or not. Second, provided that there was an influence, we classify whether a stated influence is perceived to be large or small. Third, we classify each response according to a set of 11 topic-based categories (see Table 9).

Table 9: Categorization Schema

#	Category	Label's Influence
1	Tax compliance (i.e., the label) ...increases trust/competence/transparency of the provider	Given and large
2	...serves as signal/differentiation	
3	...justifies small surcharge	
4	...is a social responsibility	
5	...is an additional criterion for equivalent providers	Given and small
6	Other factors are more important	
7	Credibility of the label is unclear	
8	Tax compliance (i.e., the label) plays no/little role	Not given
9	Cheapest price is decisive	
10	Solely the provider is responsible for tax matters	
11	Labels are not very helpful in general	

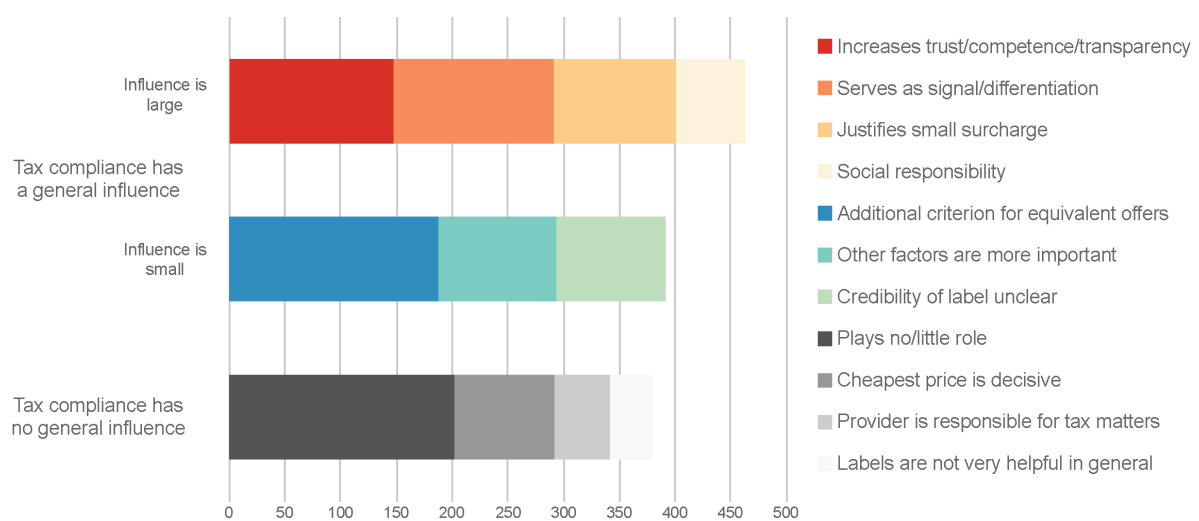
Notes: Table 9 summarizes the topic-based categories derived from the qualitative statements of the participants.

To create the set of categories, three researchers independently screened all responses and generated initial category sets. Subsequently, categories were discussed, refined, and

synthesized. Regarding inter-rater reliability, the final classification yields an average Fleiss' Kappa score of 0.660, indicating substantial agreement among raters (Landis & Koch, 1977).

Overall, we observe a distribution of themes as depicted in Figure 11. The majority (69.2%) of the respondents state to perceive an influence of the tax compliance label (37.5% large; 31.7% small). Among those who stated to perceive a large influence, participants predominantly highlight the labels trust-, competence-, and transparency-fostering effect (31.8%) and regard it as a signal with differentiating character (31.3%). Further, participants describe the label as a signal that justifies a small surcharge (23.5%) and as a marker of social responsibility (13.4%). Statements referring to a small influence mainly consider the tax compliance label as a further criterion if the competing listings are otherwise equal (47.7%), but consider other things more important (27.3%). Some participants expressed uncertainty regarding the label's credibility (25.0%). Participants that do not observe a general influence are characterized as strictly price-oriented decision-makers (23.4%), have a strict understanding of tax responsibility as a matter for the provider exclusively (13.4%), or question the usefulness of labels in general (10.0%).

Figure 11: Categorization of Participants' Responses



Notes: Figure 11 shows the number of statements for each of the eleven topics. Categorization was non-exclusive (i.e., each response can be assigned to multiple categories).

3.5 Discussion

We study the effects of tax compliance labels on consumers' booking intentions in the context of P2P sharing platforms. While platforms such as Airbnb have established systems that allow for an assessment of providers' trustworthiness and service quality (e.g., text reviews, star rating scores, or number of reviews), providers' tax compliance behavior is, as of today, not subject to any signaling device. Providers' tax compliance, however, is of utmost importance from an economic and societal perspective. This holds specifically true given the substantial tax revenue associated with peer-based accommodation sharing and the competitive dynamics in such markets where maintaining "a level playing field" (European Commission, 2016, p. 13) represents an important goal.

3.5.1 Theoretical Implications

Much of the P2P platform literature examines how different design artifacts influence the (mutual) perceptions of prospective transaction partners. To the best of our knowledge, this study is the first to examine the effects of tax compliance by means of an online experiment. Thus far, existing literature mainly considered visual labels as signals of various quality dimensions directly related to the associated service or product (e.g., Airbnb's Superhost label, Ke, 2017; S. Liang et al., 2017; Teubner et al., 2017). Given that tax compliance is at the host's discretion, we applied the theoretical lens of signaling and showed that there is in fact value in signals that refer to more indirect information such as behavioral morality. Thereby, tax compliance labels may be beneficial in a threefold way. First, they may increase tax honesty and the volume of tax payments to authorities that would otherwise not have been declared. Second, they may benefit platform users in that they represent a valuable signal that allows them to attract additional demand and/or enforce price premiums. As such, the tax compliance label may serve to distinguish between tax-honest and non-honest users in a meaningful way (separating equilibrium). Third, also platform operators may benefit by providing the infrastructure for tax compliance labels in that they a) may be able to generate additional

bookings and b) may have a positive effect on the public and political narratives on their business models. The responses to our open-ended question corroborate these conclusions. Specifically, participants stated that:

“I would filter out the listings without the tax compliance label” (Participant 203, 26, male).

“I would use a tax compliance label filter” (Participant 96, 19, male).

While providers’ tax compliance is not directly linked to their service’s quality per se (e.g., amenities or hospitality), it does affect consumers’ evaluation and is associated with an increased willingness to pay. Thereby, we show that signaling tax compliance seems to represent a way of cross-context signaling, which helps providers to establish the image of a trustworthy transaction partner (i.e., H_1) – ultimately reflected in booking intentions. We emphasize the instrumental role of platforms in designing, creating, and maintaining an environment that allows for and stimulates trust building (Kim et al., 2015). Our findings suggest that credibly demonstrating one’s tax compliance represents a powerful lever in this regard.

“The tax compliance label shows that the provider pays their taxes and, therefore, should be more trustworthy” (Participant 146, 27, female).

“I would trust the provider [with the tax compliance label] more” (Participant 288, 20, female).

Building on signaling theory, we contribute by showing how individual normative concepts influence the effects of this label. We extend existing findings describing the influence of consumers’ moral standards on the relationship of tax-compliant behavior and corporate reputation (e.g., Hardeck and Hertl, 2014; Hoopes et al., 2018) to a setting where individuals interact with peers. The effect of signaling tax compliance on trust in provider is stronger for participants who consider tax compliance as a moral obligation towards society (i.e., H_2). In

addition, conformity of moral norms affects consumers' booking intentions and intensifies the (positive) relationship between trust and booking intentions (i.e., H_3).

“I would limit the variety of the available listings to my price budget and then choose from those that have such a tax compliance label to meet my moral standards and to ease my conscience” (Participant 261, 22, female).

Our assessment of the drivers behind participants' intentions allows for a deeper understanding of how participants evaluate providers and how, within this process, moral norms guide their thinking. Previous literature primarily argued with the mere bridging of information asymmetry (e.g., with regard to product/service quality). Our results indicate that the consideration of consumers' moral norms constitutes one necessary piece of the puzzle in understanding the signal-trust relationship. In addition, moral norms seem to gain in importance since the 1980s (Wheeler et al., 2019), and their relevance should not be neglected. This insight is of vital importance for studies in the context of P2P sharing platforms since virtually all of these are associated with societal changes and, thereby, do not constitute ordinary (or neutral) markets. Particularly the case of P2P accommodation sharing is value-laden and inherently associated with many conflicts such as over-touristification, increasing rents, illegal hospitality operations, and – eventually – tax evasion (Dann et al., 2019; Frenken et al., 2019).

3.5.2 Practical Implications

Our study has implications for platform users, operators, and policymakers. First, providers should be aware that consumers actually care about tax behavior, rendering it a key driver of trustworthiness. Signaling tax compliance thereby helps to generate an overall honest and trustworthy appearance.

“I would consider the provider holding a tax compliance label to be more trustworthy, as he/she tries to behave correctly. I would also be under the impression that he/she is trying to act as honestly as possible” (Participant 318, 28, female).

Second, platform operators should consider implementing tax compliance labels. While the concept of tax labels is still novel to the platform economy, the “Fair Tax Mark” that is granted by a UK-based non-governmental organization to firms with transparent tax practices may serve as a best practice example.⁸⁷ Such labels not only strengthen consumers’ willingness to enter transactions with “tax-certified” providers, they also allow for charging price premiums for the associated offers. Our results indicate a feasible price markup of up to 18%. Some users even categorically refuse transactions with non-certified providers – an attitude, which may threaten the ongoing realization of transactions, and, thereby, the continued existence of a platform (Hodapp et al., 2019). Besides, it can be assumed that a proactive step towards tax compliance will undoubtedly improve the platform’s reputation.

“I would also be willing to pay more for an apartment that has the tax compliance label”
(Participant 362, 24, male).

Third, policymakers should actively engage platforms to employ artifacts for signaling tax compliance. Considering the flexibility in the design of digital platforms, integrating such a tax compliance label seems to be an acceptable effort for platform operators and an effective means to take the first step towards transparent taxation of transactions. Furthermore, implementing a tax compliance label would keep administrative efforts at a reasonable level for tax authorities, platform operators, and providers (Fetzer et al., 2020). At the same time, it may increase compliance regarding self-reported income. This notion is supported by Slemrod et al. (2022) who conclude that the social recognition associated with the public disclosure of tax payments induces tax compliance. Basically, there are two options for how such a tax compliance label may be granted to the provider.

The first option and one of the most direct ways is having the platform deduct and transfer the tax component directly to the tax authority. Banks have a very similar practice for security

⁸⁷ See <https://fairtaxmark.net> (accessed on July 13, 2022).

portfolios (Endres & Spengel, 2015). Several countries and municipalities have already come to agreements with Airbnb and implemented a taxation at the source, for instance for occupancy taxes.⁸⁸ Beyond that, some countries implemented unilateral measures to ensure the taxation of platform-related income. Belgium, for instance, has implemented a tax at source of 10% on certain types of sharing economy income. With this approach, the platform operator becomes liable for the collection and transfer of tax payments in every jurisdiction. Given that the platform operator disposes over all necessary information, granting the tax compliance label within this system of direct tax deduction becomes technically efficient.

The second option for the certification procedure of the tax-compliant providers could follow three steps. First, providers give consent that the platform shares their transaction data with tax authorities, including name, address, tax identification number, and details on realized transactions. A comparable voluntary income reporting system has been in place in Estonia for all P2P platforms (Ogembo & Lehdonvirta, 2020). Second, tax authorities assess the information and compare it with income declared through the tax return. Third, the provider receives the tax compliance label if the tax authority confirms the correct and truthful declaration of income over the previous year(s). Obviously, providers may still decide not to declare their total income in future periods, but then at a higher risk of detection and prosecution. As a side effect of this procedure, the verification of tax compliance by local tax authorities would substantiate the label's credibility, which we identified as a concrete requirement mentioned by consumers.

Policymakers worldwide are currently also debating on standardized rules for platform operators to share information on the realized transactions with national tax authorities (OECD, 2020b).⁸⁹ The exchange of information would enable tax authorities to identify and track cases

⁸⁸ See <https://www.airbnb.com/help/article/376/what-legal-and-regulatory-issues-should-i-consider-before-hosting-on-airbnb> (accessed on February 21, 2022).

⁸⁹ Under the provisions of the Council Directive (EU) 2021/514 (hereinafter referred to as DAC 7), certain platform operators will have to report information on the transactions and income realized by the service providers to the tax authorities of EU member states from 2024 onwards.

of potential tax evasion. Moreover, a unified reporting format would reduce complexity and keep the administrative burden for the platform operators at a reasonable level. Airbnb, for instance, has begun to show cooperativeness in this regard (Airbnb, 2020).

In light of our findings, policymakers might explore novel forms of cooperation that include, for instance, the official certification of tax-compliant providers as outlined above. Such interaction with taxpayers would meet frequently raised calls by scholars for more service-oriented tax authorities and may improve intrinsic motivation for tax compliance (Ogembo & Lehdonvirta, 2020; Pickhardt & Prinz, 2014). Overall, by ensuring tax compliance among providers, policymakers would create equal and fair competitive conditions among market participants and, thereby, might increase the platform economy's overall societal acceptance.

3.5.3 *Limitations and Future Work*

We are aware of several limitations of our study. First, our experiment's scenario is inherently hypothetical without monetary incentives. Hence, participants' statements may not fully reflect their behavior when using sharing platforms as consumers. To mitigate this concern, all used stimulus materials were closely aligned to the look and feel of actual platforms. Moreover, individuals participating on sharing platforms might be less sensitive to prices due to (some degree of) idealistic motivation (Jung & Lee, 2017; Piscicelli et al., 2015). Still, other study designs (e.g., field experiments) might yield higher external validity.

Second, our sample consists mostly of students within their 20's. However, while our sample represents the target and most active user group of P2P platforms (European Commission, 2017; Godelnik, 2017; Mittendorf et al., 2019), it also lessens our results' generalizability to the entire population or society as a whole. To ensure that our results are not driven by the most apparent covariates, we control for a broad set of variables, including age, gender, tax experience, disposition to trust, familiarity with P2P platforms, and general risk affinity. We explain 44.2% of the variance of consumers' transaction intention, which indicates potential for future research to investigate further drivers. Despite our controls, we are unable

to disentangle the effect of having a tax compliance label from having a label of any other type, for instance, the Superhost label. Studying possible interactions and the relative weights of both labels may constitute an interesting path for future research.

Finally, our study considers only the perspective of consumers. Aspects of what would motivate or deter providers from acquiring a tax compliance label remain unanswered at present. Moreover, future research should investigate potential spillover effects for platforms themselves, which may improve their reputation just by offering a tax compliance label in the first place.

3.6 Concluding Note

As the emergence of Airbnb and Uber has shown, the platform economy poses new challenges for regulatory bodies along several dimensions (The New York Times, 2018). Taxation and tax compliance in platform-mediated work and service delivery is one such aspect. For the case of accommodation sharing, we demonstrate that tax compliance can function as a reputational signal with tangible economic value for service providers (i.e., hosts) – particularly when it is in line with consumers' moral norms. Implementing tax compliance labels is beneficial for all involved actors and constitutes an essential lever to establish a level playing field in the platform economy. If incumbent and/or entrant platform operators will not do so proactively, policymakers should seize the opportunity to address the matter of tax compliance and taxation. Doing so, they may fall back on options such as direct tax deduction via the platforms or establishing agreements with providers to share their transaction data.

4 Investor Reactions to the European Public CbCR⁹⁰

4.1 Introduction

Over the last decade, the revelation of so-called “aggressive” tax planning strategies of MNEs created considerable pressure for politicians to take action against such harmful tax practices. The apparent lack of information about sophisticated tax arrangements was considered a major impediment to effective tax enforcement. With the implementation of the confidential CbCR for large MNEs, legislators aimed at deterring aggressive tax planning by increasing tax transparency of corporate taxpayers towards tax authorities (OECD, 2015). At the same time, there is a rising perception that firms should be held publicly accountable for paying their fair share of taxes where they operate.

In the EU, several attempts were made to adopt a public CbCR but failed due to a lack of majority support among member states. During the Portuguese EU Council Presidency in the first half of 2021, the discussions re-gained momentum with the publication of a new compromise draft. According to this compromise draft, affected firms would be required to publicly disclose their international activities and financial figures aggregated at the country-level. After initial confusion about whether this new draft would be able to secure majority support, the legislative bodies of the EU announced a political agreement on the introduction of a public CbCR mandate for large EU firms across industries in June 2021. This political

⁹⁰ This section is joint work with Christoph Spengel and Stefan Weck. It is published as ZEW Discussion Paper 21-077. We thank Michael Devereux, Philipp Dörrenberg, Sarah Godar (discussant), Jochen Hundsdoerfer, Martin Jacob, Christopher Ludwig, Till Münster (discussant), Francis Murphy (discussant), Zoltán Novotny-Farkas (discussant), Marcel Olbert, Martin Simmler, Johannes Voget, and the participants of the AAA Annual Meeting 2022, the EAA Annual Congress 2022, the IIPF Annual Congress 2022, the NTA 114th Annual Conference, the 5th Vienna Doctoral Consortium in Taxation, the Brown Bag Series at the Oxford University Centre for Business Taxation, the University of Mannheim and WHU Otto Beisheim School of Management, the Virtual Doctoral Tax Workshop Series, and the ZEW Corporate Taxation and Public Finance Department Meeting for helpful comments. We gratefully acknowledge funding from the Leibniz Science Campus MannheimTaxation, from the DFG – Project-ID 403041268 – TRR 266, and from the Graduate School of Economic and Social Sciences of the University of Mannheim. Raphael Müller appreciates financial support provided by the Julius-Paul-Stiegler Gedächtnisstiftung. We thank Trixi Pairan for excellent research assistance.

breakthrough was enabled as several member states changed their opinions due to rising public demand for stronger corporate tax transparency.⁹¹

The decision to implement a public CbCR constitutes a substantial shift towards public tax transparency. However, the measure is highly controversial as firms are concerned about reputational and proprietary risks resulting from such measures.⁹² The growing popularity of tax transparency measures underscores the need to understand the economic consequences of public tax disclosure, but, as Müller et al. (2020) point out, the empirical literature is divided about the materiality of the costs channels for investors. This study builds on prior evidence and provides novel insights into the costs and benefits of public tax transparency.

We exploit the EU's surprising announcement of the agreement to introduce a public CbCR to analyze how investors value the mandatory tax disclosure for EU firms. We focus on changes in stock prices, as they should reflect investors' aggregated assessment of the possible effects of the new directive. The main advantage of our setting is that the content of the new reports is already available to national tax authorities.⁹³ This implies that investor reactions are unlikely to be attributable to increased expected scrutiny by tax authorities⁹⁴ or compliance costs, i.e., costs of preparing the reports. Thus, our setting provides a unique opportunity to examine the relevance of the remaining cost channels that are frequently associated with public CbCR: reputational and proprietary costs.

From an investor perspective, several conflicting channels may be relevant. First, higher tax transparency could be beneficial for investors as it improves the information environment

⁹¹ For instance, Austria and Estonia, who previously seemed to have voted against public CbCR, indicated to have revised their positions.

⁹² In a public consultation by the OECD, the lobby group Business at OECD (2020), for example, emphasizes that “[m]any members remain strongly opposed to any attempt to make CbC report information public, for a number of reasons, including that the reports contain commercially sensitive data.” Similarly, the association Technology Industries of Finland (2020) argues that “[p]ublic reporting is an unnecessary administrative burden, including high risk for misinterpretations and request to reveal commercially sensitive data.”

⁹³ The affected MNEs have to provide even more detailed information to tax authorities under the OECD's confidential CbCR.

⁹⁴ We acknowledge that public tax disclosure may also prompt legislators to take further actions which might result in tighter regulation or stronger enforcement by tax authorities. Still, such political costs would rather arise indirectly if public pressure on politicians is sufficiently high, i.e., only if reputational costs materialize.

of investors leading to more accurate earnings forecasts (Bratten et al., 2017) and lower information asymmetries (Desai & Dharmapala, 2006). Second, the disclosure may enable investors to better assess the tax risks associated with financial sustainability performance. However, the public disclosure could also negatively affect firms' future cash flows due to reputational costs resulting from public discussions about their potentially aggressive tax planning behavior (Brühne & Schanz, 2022; Graham et al., 2014). In anticipation of such outcomes, firms may adjust legal tax arrangements to avoid public scrutiny (Dyreng et al., 2016). Another threat to firm value are proprietary costs resulting from the disclosure of commercially sensitive information to competitors and business partners. In light of the heterogeneous effects, it remains an empirical question, which channel ultimately dominates.

To identify an investor reaction to the introduction of a mandatory public CbCR, we employ a short-term event study design. Using the Factiva database, we measure media attention and identify an event window of up to three days (from June 2-4) in which we expect an investor reaction to take place. Based on a sample of 691 potentially affected firms, we find a significant negative investor reaction on the capital markets. The corresponding short-term CAARs range between -0.484% and -0.660% for up to three days following the announcement, which translates into a value drop of EUR 48.113 to 64.911 billion. Our results are robust to using alternative specifications and identification strategies. We conclude that investors evaluate reputational risks arising from public scrutiny and potential proprietary costs to outweigh potential benefits of an extended information environment or more sustainable corporate tax strategies.

Subsequently, we try to disentangle the drivers of the observed overall negative investor reaction and explore the two potential cost channels. We first examine the role of reputational risk exposure in the marginal investor's response behavior. Conducting various cross-sectional analyses, we find a significantly stronger response to firms that are regarded as more tax aggressive. Our finding suggests that investors expect a deterrence effect. That is, investors

expect affected firms to refrain from more aggressive tax avoidance strategies to avoid reputational damage. Thereby, affected firms do not fully exploit their tax savings potential, which negatively impacts the expected cash flows.

In a second step, we examine the role of proprietary costs by exploiting differences in the competitive environment of our sample firms. We find a significantly stronger response for more profitable firms and firms operating in industries with high competitor growth rates. In contrast, we observe no significant effects for firms operating in industries with low industry concentration ratios and with low turnover growth rates. Our results suggest that the competitive environment is likely to play a role for investors. Due to the general limitations of competition intensity measures, however, we consider this finding rather indicative.

Ultimately, we examine the relative importance of the two cost channels and document that, from an investor perspective, reputational risks seem to be more relevant than potential competitive disadvantages resulting from public CbCR. In the combined analysis of the two channels, only the proxies for reputational risks remain statistically significant.

Our analysis contributes to the extant literature that leverages capital market reactions to provide early indications about the effect of tax reforms in general (Gómez-Cram & Olbert, 2022; Klein et al., 2022) and tax transparency measures in particular (Dutt, Ludwig, et al., 2019; Johannesen & Larsen, 2016). Prior studies examining the investor reaction to public CbCR were based on regimes that were originally introduced as public CbCR regimes. Hence, the investor reaction also reflected the expected cost of more targeted tax audits, which made it difficult to assess the relevance of different cost channels of public tax transparency. By contrast, the focal EU draft proposal subject to our analysis only requires the publication of previously confidentially reported information. Therefore, our setting offers a rare opportunity to mitigate concerns about (1) potential direct compliance costs resulting from a new obligation, (2) higher tax payments resulting from more targeted audits through better-informed tax

authorities and (3) a potential threat of double taxation to be the actual relevant driver of the observed effect.

Furthermore, prior literature examined investor reactions to CbCR in the context of the public CbCR regimes for either the extractive and logging industry (Johannesen & Larsen, 2016) or the banking sector (Dutt, Ludwig, et al., 2019). Notably, the CbCR regime for the extractive and logging industry was initially designed as a measure to combat corruption, which is a particularly prevalent issue in this specific industry. The CbCR regime for the banking sector, on the other hand, was implemented as part of a whole battery of measures intended to stabilize the EU banking sector in the course of the Basel III resolutions after the global financial crisis. Although the banking CbCR was included as a tax-motivated instrument via detours in this catalog, the attention of investors was presumably centered on other, more drastic measures within the bundle. Consequently, previous event studies drew tax implications from settings that were not primarily tax-driven or potentially confounded due to their course of introduction. By contrast, our study is the first to examine an investor reaction to public CbCR as a purely tax-motivated regime that is introduced as a stand-alone measure and with a cross-industry scope.

Regarding the discussion about public CbCR representing a component of sustainability reporting, we add to an emerging stream of literature. In particular, our results corroborate prior findings that investors do not appreciate CSR disclosures at any cost. Grewal et al. (2019) examine investor reactions to the passage of the EU directive on disclosure of non-financial information and find positive abnormal returns for firms with strong pre-regulation environmental, social and governmental (ESG) disclosure and performance but even stronger negative abnormal returns for firms with low pre-regulation ESG disclosure and performance. Andreicovici et al. (2022) examine an SEC disclosure rule, which requires oil and gas firms to publish details about their payments to host governments and find a negative investor reaction that is particularly pronounced for firms with greater reputational risks. Both studies focus on

ESG reporting in general but do not provide evidence for its individual components. To the best of our knowledge, we are the first in this context to add more granular evidence on tax transparency, which is a momentum-gaining component of non-financial sustainability reporting.

The inherent characteristics of our setting provide for a high external validity of our findings. Our implications are equally applicable to similar measures and very timely given ongoing political efforts in the US to expand the confidential CbCR regime into a public regime. With the “Disclosure of Tax Havens and Offshoring Act”, a corresponding draft bill has already been submitted to the Senate and awaits approval for further legislative actions. In addition, the globally most widely applied standard for sustainability reporting, the GRI, was augmented by an additional module on taxation (GSSB, 2019a), providing for a de facto voluntary public CbCR. Against this background, our findings provide a meaningful contribution for the design of similar tax transparency measures. Our results imply that, in case of a mandatory public CbCR measure, decision-makers should take into account that affected firms will incur substantial costs that significantly exceed the benefits from an investor perspective.

The remainder of this section is organized as follows. Section 4.2 describes the setting of our event study, contextualizes it against the extant literature, and presents our hypothesis. Section 4.3 describes our sample selection procedure and methodological approach to identify the investor reaction. Section 4.4 presents the corresponding findings from our main analysis and robustness tests. Section 4.5 examines the relevance of reputational and proprietary costs associated with the public CbCR for investors in cross-sectional analyses. Section 4.6 concludes.

4.2 Institutional Background

4.2.1 *EU Proposal on Public CbCR*

The idea to require large MNEs to publicly disclose a detailed CbCR was first discussed in 2016 when the EU legislative bodies adopted the confidential CbCR to tax authorities. The confidential CbCR was part of Action 13 of the OECD project on BEPS. In its final report, the OECD emphasized that the measure was developed to facilitate high-level risk assessments by tax authorities and that the reports should remain confidential (OECD, 2015).

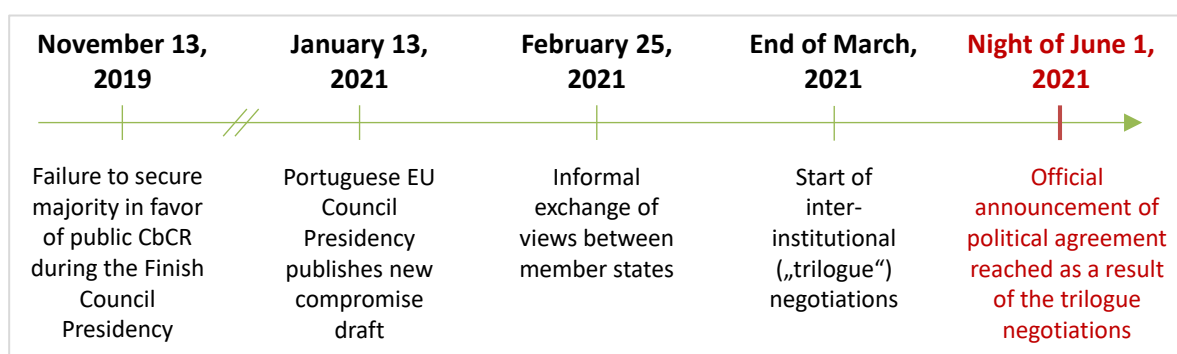
In parallel to the adoption of the confidential CbCR in the EU and despite the clear guideline by the OECD, the European Commission published a draft proposal for the public disclosure of income tax information on April 12, 2016. The measure was intended to complement the confidential CbCR. The European Parliament expressed support for the initiative arguing that additional tax transparency would allow for better public monitoring of multinational firms. Subsequently, the European Parliament defined its negotiation position in a plenary vote on July 4, 2017. The negotiations in the Council of the EU proceeded slowly in the following months and were delayed due to substantial disagreement between member states.⁹⁵ On November 13, 2019, the Finish Presidency of the Council released a compromise draft. However, the negotiations reached a deadlock as the majority of countries disapproved the proposal. Under the successive two presidencies, no further attempt was made to advance the process.

At the beginning of its Presidency, Portugal published a new compromise draft to revive the negotiations in the Council (January 13, 2021). The draft was discussed in various committees and working groups, but it was questionable whether Portugal could secure the required majority vote. On February 25, the Portuguese Council Presidency invited the Member

⁹⁵ Officially, the main concern was related to procedural rules for a public CbCR. Directives on direct taxation require unanimity among member states whereas directives on financial reporting may be adopted by qualified majority in the Council.

States to exchange their views on the latest compromise draft during an informal video conference. At the end of the meeting, the Presidency noted that there was sufficient support by the member states to further proceed with the draft proposal. Although not legally binding, the outcome of this informal meeting encouraged the Council to enter into interinstitutional (“trilogue”) negotiations with the European Parliament and the European Commission. These formal negotiations usually take several months and may fail if the institutions do not strike a compromise. The early breakthrough after the third trilogue meeting was, therefore, quite a surprise. In the late evening of June 1, 2021, the European Parliament announced that a provisional agreement on the directive had been reached. This political agreement of the legislative bodies constitutes our main event since it resolved investors’ long-lasting

Figure 12: Timeline of Events



Notes: Figure 12 illustrates the timeline of key legislative events leading to the official announcement of the political agreement on the public CbCR in the late evening of June 1, 2021. We briefly summarize the information for each of the events.

uncertainty on the legislative process. Moreover, the agreed-upon compromise draft clearly defined the scope of the new directive. Figure 12 provides a timeline of the key legislative events leading to the compromise on June 1, 2021. To support our choice of the main event, we assess the media coverage along the legislative process by searching the Factiva database for relevant news articles (see Section 4.3.1).

The agreed-upon comprise draft requires large MNEs headquartered in the EU with consolidated revenues above EUR 750 million in each of the last two preceding financial years to prepare and disclose a detailed report on their geographic operations together with financial

items aggregated on country-level.⁹⁶ The requirements are similar to the confidential CbCR, but the proposal constitutes a reduced version of the OECD approach in terms of scope and financial items. The geographic coverage is limited to activities in European member states and a number of other jurisdictions that are blacklisted as non-cooperative jurisdictions for tax purposes (“tax havens”).⁹⁷ In contrast to the confidential CbCR, firms are not required to separate related-party revenues and third-party revenues. Moreover, stated capital and tangible assets are not included in the public version. The reports must be made available to the public free of charge on the firm’s website or public registers within 12 months after the end of the financial year. Affected firms may obtain a deferral of disclosure of certain commercially sensitive items for a maximum of five years.⁹⁸ In sum, the proposed reporting requirement is less comprehensive than previous CbCR regimes and the voluntary sustainability reporting standard on taxation, GRI 207, which requires a public CbCR on worldwide activities (GSSB, 2019a).

4.2.2 *Related Literature and Hypotheses*

The capital market reaction to the new directive depends on investors’ expectations about how the higher level of tax transparency will impact future cash flows of affected firms. The information contained in the reports provides novel insights on the international business structures of affected firms to investors and several stakeholders, including analysts, business partners, competitors, NGOs, the media, and customers. Rational investors will take the reactions of all stakeholders into account when assessing the consequences of the new measure.

In principle, investors may appreciate the additional disclosure as it helps to evaluate firm fundamentals and future cash flows. Prior studies suggest that tax-related disclosure is

⁹⁶ The reporting obligation also applies to EU subsidiaries of non-EU multinationals if consolidated group revenues exceed the threshold.

⁹⁷ This list is compiled and regularly updated by the Council. At that time, the current version included mostly small pacific islands but more prominent countries like Turkey and Australia were under review (Council, 26.02.2021, 2021/C 66/10).

⁹⁸ However, information on jurisdictions listed as tax havens may never be omitted.

associated with more accurate forecasts on future earnings (Bratten et al., 2017; Hanlon et al., 2005). Public CbCR makes detailed information about the profitability and tax payments in foreign markets available. The geographic segment reporting under current financial reporting standards does not provide this level of granularity.

Moreover, CbCR may enable investors to evaluate the efficiency of managers' tax avoidance strategies (Frischmann et al., 2008). Tax savings from legal tax planning increase corporate profits and are, thus, in the interest of shareholders. In line with this argument, prior literature documents positive stock price reactions to news about legal corporate tax avoidance (Blaufus et al., 2019) or the disclosure of advance tax rulings in Luxembourg (Huesecken et al., 2018). While tax planning is, per se, beneficial for investors, it might also give rise to agency conflicts if managers set up complex structures to divert private rents (Desai & Dharmapala, 2006). This problem seems to be more pronounced for firms with weak corporate governance mechanisms. Desai and Dharmapala (2009) examine the ambivalent relationship between tax avoidance and firm value. The authors find that tax planning increases firm value only for firms with a high share of institutional owners. The agency perspective helps to explain positive market reactions to increased tax enforcement (Desai et al., 2007). Similarly, public CbCR could reduce information asymmetries between shareholders and managers and allow for better monitoring of firm insiders.

Several NGOs and investors supported the inclusion of a public CbCR in the new GRI reporting standard on taxation. According to the public comments, CbCR can be used as an informative source for evaluating firms' performance on sustainability and its value implications (GSSB, 2019b). The positions are not representative of all capital market participants but reflect the growing demand for non-financial disclosure and investment opportunities in sustainable firms. According to Jones (2021), firms are increasingly aware of this demand and acknowledge that tax transparency is an important aspect for risk-averse and image-conscious investors. The following two anecdotal examples corroborate this impression.

In 2020, the Norwegian Government Pension Fund, which is the world's largest sovereign wealth fund with about USD 1.3 trillion assets under management, disposed its shares in seven firms due to their aggressive tax planning strategies and insufficient disclosure of where they pay taxes (Reuters, 2021). In March 2022, the Financial Times reported on a conglomerate of institutional investors putting pressure on Amazon to increase tax transparency and indicate how much taxes it pays on a per-country-level. In a letter, which was signed by over 100 investors overseeing USD 3.6 trillion in assets, the stakeholders emphasized that a firm's tax practices are financially material and urged Amazon to issue a tax transparency report including a CbCR according to the GRI standard (i.e., even more extensive than the scheme subject to our study) (Financial Times, 2022). Consequently, higher (imposed) tax transparency may lead to a better-perceived sustainability performance by investors and render affected firms a more attractive investment target. This factor would have a positive impact on the share price.

Yet, even if all investors appreciate the reporting mandate, they might still conclude that the disclosure will be costly for affected firms. Grewal et al. (2019) examine capital market reactions to events around the passage of the Non-Financial Reporting Directive in the EU. The authors show that stock prices of affected firms decline significantly, suggesting that the disclosure mandate is expected to lead, on average, to net costs for affected firms.⁹⁹ Moreover, their empirical results imply that the negative reaction is mainly attributable to proprietary and reputational costs.¹⁰⁰ Their findings are corroborated by recent survey evidence from Brühne and Schanz (2022) who document that tax practitioners consider reputational risks to be among the most important factors for corporate tax risk management. Hence, both cost channels might also be relevant in the context of a public CbCR.

⁹⁹ However, Grewal et al. (2019) document positive investor reactions for firms that had good CSR performance and voluntary reporting scheme prior to the directive.

¹⁰⁰ The results are similar to the findings by Andreicovici et al. (2022) who assess capital market reactions to the SEC's extractive payments disclosure rules.

Reputational risks and public pressure are important determinants for corporate tax strategies (Austin & Wilson, 2017; Graham et al., 2014). For instance, Dyreng et al. (2016) find that UK firms reduce the level of tax avoidance following public scrutiny on their disclosures provoked by an activist group. Such adjustments decrease after-tax profits and subsequently shareholder wealth if alternative schemes cannot sustain the tax savings. Under public CbCR, activist groups or the media could utilize the tax information in the reports to exert pressure on firms to “pay their fair share”. In fact, holding firms publicly accountable for their tax payments has been an explicit goal of the measure (European Parliament, 2019). If investors predict that public CbCR increases the probability of public pressure and causes firms to adjust their tax planning strategies, we should observe a negative reaction around the event.

The risk of proprietary costs arises from the disclosure of commercially sensitive information in the CbC reports. Non-EU competitors may learn about the geographic exposure and profitability of their rivals. Similarly, suppliers and business clients benefit from insights into the international value chains of their partners. Direct evidence on proprietary costs is scant, but recent studies suggest that proprietary costs are responsible for reduced voluntary corporate disclosure in competitive markets (Ellis et al., 2012; Huang et al., 2017). In the context of geographic segment reporting under IFRS 8, Leung and Verriest (2019) find that firms aggregate financial items for growing and profitable regions consistent with high proprietary costs.

In sum, all channels likely influence investors’ response to the new public CbCR-requirement, but with different weights. Two related studies analyze capital market reactions to the introduction of industry-specific CbCR initiatives in the EU. Johannesen and Larsen (2016) examine firms’ stock prices in the extractive industries (i.e., oil, gas, and mining firms) around key dates in the legislative process. Notably, the primary purpose of the regulation was to increase financial transparency in a sector that is prone to bribery and fraud, especially in developing countries (Rauter, 2020). The authors document very strong decreases

in firm value but do not test for potential channels that drive the effect. In contrast, Dutt, Ludwig, et al. (2019) find no significant market response to the introduction of a public CbCR in the banking sector.¹⁰¹ Both studies conclude that increased tax transparency led to a reduction in tax avoidance opportunities as it facilitates the detection of aggressive tax planning schemes for tax authorities. This interpretation is supported by several studies that find evidence consistent with banks reducing profit shifting activities among affiliates and tax havens following the disclosure requirement (Eberhartinger et al., 2020; Joshi et al., 2020; Overesch & Wolff, 2021).

The main difference between our setting and the two industry-specific CbCR regimes is that tax authorities had no information about foreign activities and tax payments prior to the publication of the industry-specific reports. Thus, the results above imply that the authorities may have used the reports for unilateral transfer pricing adjustments. However, in our setting, the disclosed reports should not reveal any additional information to tax authorities as they already receive the more detailed confidential reports for their tax assessments.¹⁰² Therefore, we argue that investors should not anticipate negative effects on future cash flows because of better-informed tax authorities or material direct costs from preparing the reports. Thus, absent this mechanism, we analyze whether the costs of disclosure (reputational or proprietary costs) still outweigh the benefits of reduced information asymmetries. In that sense, our analysis is also related to the setting in Hoopes et al. (2018), who examine an Australian tax disclosure rule. The regulation mandated the ATO to disclose taxable income and tax payable for large public Australian and foreign-owned firms. Their event study analysis shows that stock prices of affected firms decline significantly around the enactment of the law. The authors focus on firms with zero tax expense reported in financial statements, hence, those firms with

¹⁰¹ The transparency measure was part of the CRD IV, which implemented the Basel III standards into EU law. The main purpose of the directive was to ensure the financial stability of the EU banking system (Dutt, Ludwig, et al., 2019).

¹⁰² First empirical evidence indicates that MNEs reduce the level of tax avoidance and shift real investments to European tax havens following the confidential CbCR (De Simone & Olbert, 2022; Joshi, 2020).

presumably the highest public scrutiny. The results suggest that investors anticipated higher costs for these firms. Similar considerations might apply in the case of a public CbCR. However, public CbCR is more comprehensive than the Australian disclosure regime as it requires the disclosure of several metrics on economic activities and profitability for all jurisdictions rather than the publication of tax payments in one single country. The reports could, therefore, be informative for competitors and business clients which results in an additional cost channel for affected firms. Based on these findings, we expect that investors perceive the additional disclosure as (net) costly. We hypothesize that:

H₁: Investors respond negatively to the political agreement on a public CbCR for large European firms.

In particular, we conjecture that the benefits of the new information do not compensate for the reputational and proprietary cost arising from the disclosure. In line with the findings by Grewal et al. (2019), we furthermore expect that both cost channels drive the negative investor reaction. We therefore hypothesize that:

H₂: Investors respond more negatively to firms with higher reputational risks.

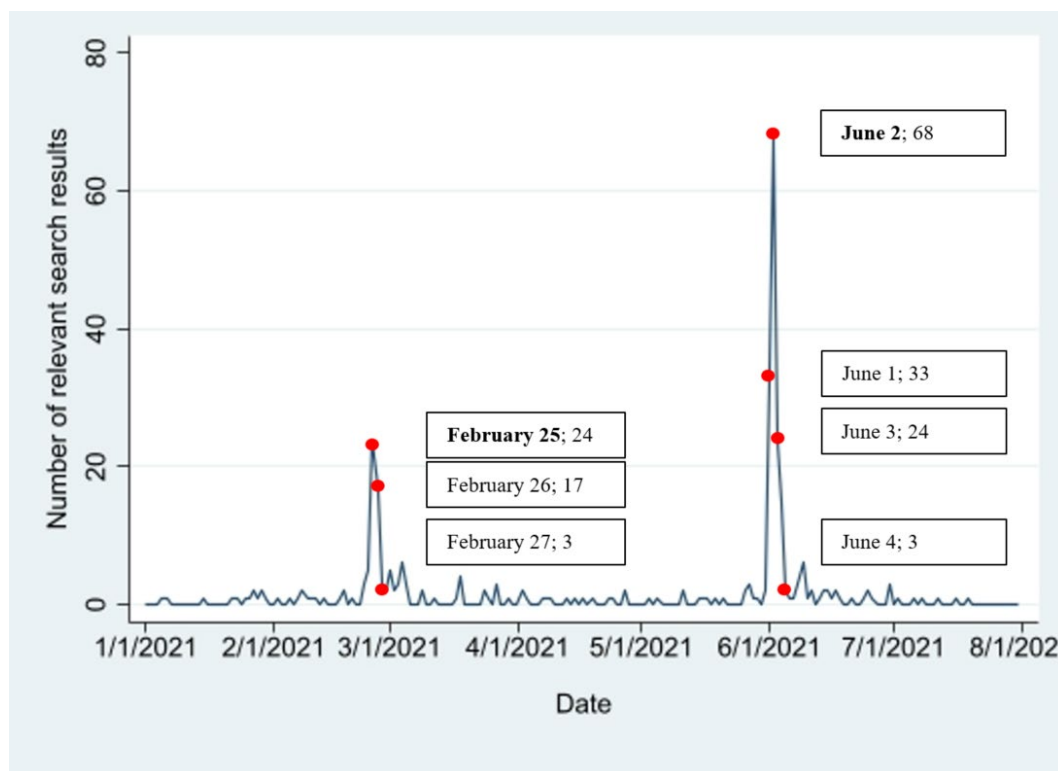
H₃: Investors respond more negatively to firms with higher proprietary risks.

4.3 Empirical Strategy

4.3.1 Event Date

As discussed in Section 4.2.1, the unexpected trilogue agreement to introduce a public CbCR regime in the EU was announced in the evening of June 1, at around 9:15 pm (Central European Time). Given that the major stock exchanges were already closed or about to close at the time of the announcement,¹⁰³ we expect a stock price reaction to take place on June 2 at the

¹⁰³ The major European and Asian Stock exchanges (i.e., London, Frankfurt, Paris, Hong Kong, Tokyo, Singapore, Shanghai) were already closed at the time of the announcement. The stock exchanges in New York and Toronto closed 45 minutes after the announcement.

Figure 13: Media Coverage Analysis

Notes: Figure 13 depicts the number of search results in the Dow Jones Factiva database, using the search term “country by country reporting” for the period from January 1 to July 31, 2021. Our search query results in 912 publications. 301 search results are identified as duplicates in Factiva and therefore excluded, leaving 611 publications. We manually inspect all 611 articles to determine if an article actually deals with the EU’s public CbCR proposal or its legislative process. The remaining 325 relevant articles are depicted in the figure. The graph displays two extraordinary spikes, on February 25 and June 2, respectively. We note that the spike in June starts building up on June 1. However, given that the major stock exchanges were either already closed or about to close after the announcement on June 1, the graph confirms our expectation that June 2 represents a suitable event date.

earliest. To validate our expectation, we measure international media attention using the Dow Jones Factiva database (Borghesi et al., 2014; S. Chen et al., 2019). Figure 13 depicts the corresponding result.

The graph shows particularly strong media attention between June 1 and June 4, confirming our expectation. The cumulative media coverage around the June event (i.e., June 1-4) accounts for 43.1% (i.e., $(33+68+24+3)/325$) of the overall media coverage measured. Consequently, we identify June 2 as the event date of interest for our analysis.

Moreover, we observe above-average media attention around the event on February 25 (13.5% of the overall media coverage measured). However, after inspecting the articles, we do

not expect an investor reaction around this event despite the high media coverage for two reasons. First, the agreement in February was only of preliminary and unofficial nature, which is also reflected in the media reports. Second, it is especially smaller and local media with a geographically limited target audience that pick up the agreement in February. Except for *The Guardian*, we could not identify any further outlets with an international target audience around the February event. In contrast, the main event in June is also covered by the *Financial Times* and *Shanghai Daily*, for example. Moreover, while we do not find an official press release from a constitutional organ of the EU in February, the European Parliament published a press release on June 1. Nevertheless, we assess the capital market reaction around February 25 as an alternative event date.

4.3.2 Data and Methodological Approach

To analyze the investor reaction to the EU announcement, we examine the stock returns of affected firms around the identified event, as described by Kothari and Warner (2007) and applied in recent literature (Kajüter et al., 2019). That is, we estimate the magnitude of abnormal returns based on the stock price development of a suitable benchmark (i.e., market) portfolio.

We identify firms that are likely to be subject to the directive using BvD's flagship database Orbis, based on the scope of the EU draft proposal. That is, we require sample firms to exceed the turnover threshold of EUR 750 million in their last two available reporting periods. Moreover, we require firms to be active and publicly listed to be able to observe stock returns. To ensure the timeliness of our data, we exclude firms whose last available reporting year is prior to 2019. Furthermore, we require firms to be headquartered within the EU to ensure that the selected firms fall under the scope of the directive. We exclude firms that operate either in the extractive and logging industry,¹⁰⁴ respectively the banking sector,¹⁰⁵ as these firms are already subject to an industry-specific CbCR regime. We merge the resulting 731 firms with

¹⁰⁴ The corresponding Nomenclature of Economic Activities (NACE) Rev. 2 codes are 0110-0322 and 0510-0990.

¹⁰⁵ The corresponding NACE Rev. 2 codes are 6411-6499 and 6611-6630.

the Thomson Reuters EIKON database to obtain accounting data from Worldscope and stock market information from Datastream. We lose 34 firms that cannot be merged in this step.

We retrieve return information for our treatment firms and the benchmark portfolio from Datastream for the period starting January 1, 2020, and ending June 17, 2021, resulting in stock return information on 382 trading days for each firm. We use Datastream's Total Return Index (RI),¹⁰⁶ which represents a theoretical value growth by assuming that dividends are reinvested to purchase additional units of the respective stock. Due to the international scope of our sample, we consider the MSCI World to be the most suitable available proxy for the market portfolio. The MSCI World is a global stock index that tracks the performance of more than 1,600 firms from 23 countries. The firms in our sample account for 10.8% of the MSCI World, mitigating concerns that treatment firms considerably impact the return of the benchmark portfolio.

Our Factiva analysis shows that the media coverage spike for our main event lasts until June 4 and subsequently reverts to the average level of media attention. Therefore, we expect a reaction to take place within three days, i.e., our event day June 2 and two subsequent days, at most. Given that our event study methodology is more powerful for short term event windows (Kothari & Warner, 2007), we apply 2-day (0,1) and 3-day (0,2) event windows for our regression analyses.¹⁰⁷ Thereby, we allow capital markets to impound the reactions into firms' stock prices (Grewal et al., 2019). For the estimation period, we follow Johannesen and Larsen (2016) and Dutt, Ludwig, et al. (2019) and use a 1-year period ending six days before the respective events.¹⁰⁸ We only keep firms with at least 70% non-zero returns in our estimation

¹⁰⁶ The index value RI is calculated using a method in which the discrete quantity of dividend paid is added to the price on the ex-dividend date. That is, RI is computed as follows: $RI_t = RI_{t-1} * \frac{p_t}{p_{t-1}}$, where p_t equals the price on date t and p_{t-1} equals the price on the previous date. If t equals the ex-date of dividend payment D_t , the method adjusts as follows: $RI_t = RI_{t-1} * \frac{p_t + D_t}{p_{t-1}}$.

¹⁰⁷ This is also our specification of choice for the alternative event day, given that the media reaction reaches a spike on February 25 and decays until February 27.

¹⁰⁸ To test the robustness of our results, we also employ a short-term estimation period of three months and find that our results are robust to alternative estimation period specifications (see Appendix 7 and Appendix 8).

and event period to ensure that sample firms are actively traded to mitigate difficulties during the estimation of the market model (Dutt, Ludwig, et al., 2019). Based on this identification strategy, we end up with a final sample of 691 treatment firms. Table 10 provides a detailed overview of our selection process.

Table 10: Sample Selection Process

Selection step	Firm observations
All active firms in Orbis	288,485,396
Require firms to be publicly listed	-288,397,152
Require firms to exceed the turnover threshold of EUR 750 million in their last two available years	-81,710
Require firms to have financial data available until at least 2019	-19
Exclude non-EU based firms	-5,685
Exclude firms in the extractive & logging industry	-16
Exclude firms in the banking sector	-83
Exclude firms that could not be identified in Datastream	-34
Require at least 30% of non-zero returns in the sample period	-6
Final treatment sample	691

Notes: Table 10 depicts the sample selection process. The EU draft proposal requires firms exceeding a turnover threshold of EUR 750 million in two consecutive years to fall under the disclosure obligation. The term “turnover” in the table refers to the Orbis variable “Operating Revenue (Turnover)”. Firms without data in reporting years 2021-2019 are excluded to ensure the temporal relevance of the dataset. Non-EU-based firms are excluded, as they are only subject to a reduced disclosure obligation under the draft proposal (i.e., they are only required to disclose their business activities within, but not outside of the EU on a CbC basis). Firms in the extractive & logging industry (NACE Rev. 2 codes: 0220 and 0510-0899) and the banking sector (NACE Rev. 2 codes: 6411-6499 and 6611-6630) are excluded as they are subject to an industry-specific CbCR regime in the EU. To mitigate difficulties resulting from the estimation of the market model with a zero-return high ratio, we require at least 30% of non-zero return days in our sample (Dutt, Ludwig, et al., 2019).

Table 11 shows the descriptive statistics of our sample. The average daily stock return amounts to 0.17%, slightly higher than the average daily return of the benchmark portfolio MSCI World (0.10%). The minimum turnover value of EUR 750 million in the last available year indicates that at least one firm is located close to the reporting threshold. The median firm accounts for a turnover of EUR 2.92 billion, has an effective tax rate of 23.58%, and an intangible-to-total-assets ratio of 20.93%. We provide a country breakdown of our sample in Appendix 5.

Table 11: Descriptive Statistics

Variable	N	Mean	SD	P25	Median	P75	Min	Max
Stock Return	181,733	0.17	2.49	-0.96	0	1.17	-66.67	184.44
MSCI World Return	263	0.10	0.91	-0.34	0.10	0.59	-5.21	2.82
S&P Global 1200 Return	263	0.10	0.93	-0.42	0.13	0.63	-5.41	2.87
Turnover in last available year	691	9.47	19.50	1.54	2.92	8.64	0.75	231
ETR	410	31.18	25.91	15.77	23.58	35.91	0	100
Intangible-to- total assets ratio	410	24.69	19.47	6.51	20.93	38.53	0	88.57
B2C	410	42.93	49.50	0	0	1	0	1
Governance Pillar Score	410	58.92	21.73	43.21	59.70	77.26	2.86	98.64
HHI	410	0.03	0.05	0.01	0.02	0.04	0	0.40
Turnover growth	410	1.40	1.65	0.55	0.86	1.74	-0.13	15.95
Competitor growth	410	4.33	15.65	-0.11	0.68	4.69	-0.78	198.98
ROA	410	6.21	4.75	3.32	5.43	7.79	-6.32	37.06

Notes: Table 11 shows descriptive statistics of our sample firms. Turnover is stated in billion EUR. Governance Pillar Score is used as provided by Refinitiv and assumes values between [0,100]. HHI is the Herfindahl-Hirschman Index after multiplying the percent market shares by 100 (i.e., HHI may assume values of up to 10,000). All other variables are stated in percent. ETR and Intangible-to-total-assets ratio are restricted to values between [0, 100] to limit the influence of outliers (Joshi et al. 2020; Joshi 2020). The sample selection process is described in detail in Table 10. We provide a detailed overview of our variable definitions in Appendix 9.

For our main analysis, we use the event study design of Thompson (1985) and Eckbo (2007), assuming the Sharpe-Lintner Capital Asset Pricing Model (CAPM) to be the applicable return-generating process. This procedure implies the following regression model for the estimation of abnormal returns:

$$r_{it} = \alpha + \beta r_{mt} + \gamma Event_t + \varepsilon_{it} \quad (1)$$

where r_{it} is the realized return of firm i on trading day t , r_{mt} is the realized return of the benchmark portfolio (i.e., in our main analysis the MSCI World) and $Event_t$ is a dummy variable indicating trading days within the event period. ε_{it} is the error term and captures all effects that are not included in the model. The constant α represents an estimate for the alpha of an equally-weighted portfolio of our treatment firms and β is an estimate for the portfolio's market beta. γ represents an estimate for the average abnormal return during the event window

and is, therefore, our coefficient of interest. To compute the CAAR, we multiply γ by the number of days in our event window (Doidge & Dyck, 2015; Klein et al., 2022).

4.4 Results

4.4.1 Main Findings

The results for our main event are presented in Table 12. In both specifications, we use the 1-year period estimation window (-266,-6) and cluster standard errors on both firm- and trading day-level. Column 1 depicts the results of our baseline analysis. For the 2-day event window (0,1), we find that the average sample firm experiences an abnormal return of -0.484%, statistically significant at the 1%-level. Our regression results further indicate a market beta of 0.671 and a portfolio alpha of 0.107.

Table 12: Results for Main Event Date (June 2)

	(1) (0,1) Event window	(2) (0,2) Event window
Constant	0.107** (2.416)	0.107** (2.416)
Market Return	0.671*** (10.790)	0.671*** (10.790)
Event	-0.484*** (-3.742)	-0.660*** (-3.749)
Observations	181,733	182,424
Standard errors clustered on firm-level	Yes	Yes
Standard errors clustered on trading days	Yes	Yes
Firms	691	691
Adj.-R ²	0.06	0.06
Value Effect	-48.113	-64.911

Notes: Table 12 presents the estimation results of equation 1: $r_{it} = \alpha + \beta r_{mt} + \gamma Event_t + \varepsilon_{it}$ for the main event (June 2). r_{it} is the realized return of firm i on trading day t , r_{mt} is the realized return of the market portfolio (MSCI World) and $Event_t$ is a dummy variable indicating trading days within the respective event window. ε_{it} is the error term and captures all effects that are not included in the model. Column 1 shows the regression results using a 2-day event window starting on the event date, i.e., June 2. Column 2 shows the regression results using a 3-day event window starting on the event date. The *event* coefficient is already multiplied by the number of days in the respective event window and therefore represents the CAARs. *Value effect* translates the CAARs into a monetary value, by multiplying the firm CAARs with their respective market capitalization on June 1. *Value effect* is stated in billion EUR. Robust t-statistics in parentheses.

*, **, and *** indicate statistical significance at the 10, 5, and 1 percent levels, respectively.

Column 2 shows our regression results using an alternative 3-day event window (0,2). We find that the average firm accounts for an abnormal return of -0.660%. Estimates for the market beta and portfolio alpha are unaffected by this change, both in terms of magnitude and statistical significance.

Next, we analyze the alternative event on February 25, which was identified in the Factiva media coverage analysis. We follow our main event analysis and use (0,1) and (0,2) as event window specifications. The corresponding results are depicted in Table 13. We find positive CAARs for both specifications, amounting to 0.908% and 0.573% for the (0,1) and (0,2) event windows, respectively. In both cases, however, our estimates are statistically insignificant.

Table 13: Results for Alternative Event Date (February 25)

	(1) (0,1) Event window	(2) (0,2) Event window
Constant	0.034 (0.543)	0.034 (0.545)
Market Return	0.726*** (10.800)	0.723*** (10.870)
Event	0.908 (0.502)	0.573 (0.299)
Observations	182,424	183,115
Standard errors clustered on firm-level	Yes	Yes
Standard errors clustered on trading days	Yes	Yes
Firms	691	691
Adj.-R ²	0.16	0.16

Notes: Table 13 presents the estimation results of equation 1: $r_{it} = \alpha + \beta r_{mt} + \gamma Event_t + \varepsilon_{it}$ for the alternative event date (February 25). r_{it} is the realized return of firm i on trading day t , r_{mt} is the realized return of the market portfolio (MSCI World) and $Event_t$ is a dummy variable indicating trading days within the respective event window. ε_{it} is the error term and captures all effects that are not included in the model. Column 1 shows the regression results using a 2-day event window starting on the alternative event date, i.e., February 25. Column 2 shows the regression results using a 3-day event window starting on the event date. The *event* coefficient is already multiplied by the number of days in the respective event window and therefore represents the CAARs. Robust t-statistics in parentheses.

*, **, and *** indicate statistical significance at the 10, 5, and 1 percent levels, respectively.

In sum, we find a negative average investor reaction to the EU's announcement of a public CbCR regime in our main analysis. Our findings are consistent with the notion that the average investor evaluates the associated costs of public disclosure to exceed the benefits from a more

extensive information environment and a potentially improved financial sustainability position associated with the increasing public pressure to be a “good corporate citizen”.

Moreover, these findings are consistent with the results of Johannesen and Larsen (2016), who also find a negative investor response for the introduction of a public CbCR in the extractive sector. The smaller effect size of our estimations is likely due to the divergent backgrounds of the CbCR regimes. As explained in Section 4.2.2, the CbCR regime for the extractive and logging sector was developed primarily to combat criminal business practices, such as corruption in developing countries. In addition to reputational costs, the discovery of illegal activities also leads to direct costs from legal proceedings and potential fines. The tax CbCR on the other hand, was primarily designed to reveal tax avoidance resulting from mostly legal practices that exploit loopholes in the global system of national tax laws.

4.4.2 Identifying Assumptions

The event study methodology employed for our main analysis is based on the assumption that the observed capital market reaction is directly attributable to the event in question. Confounding events, therefore, pose a threat to the identification strategy. Similarly, the plausibility of the model and its parameters need to be carefully assessed. We will address these concerns in the following to strengthen the confidence in our main results.

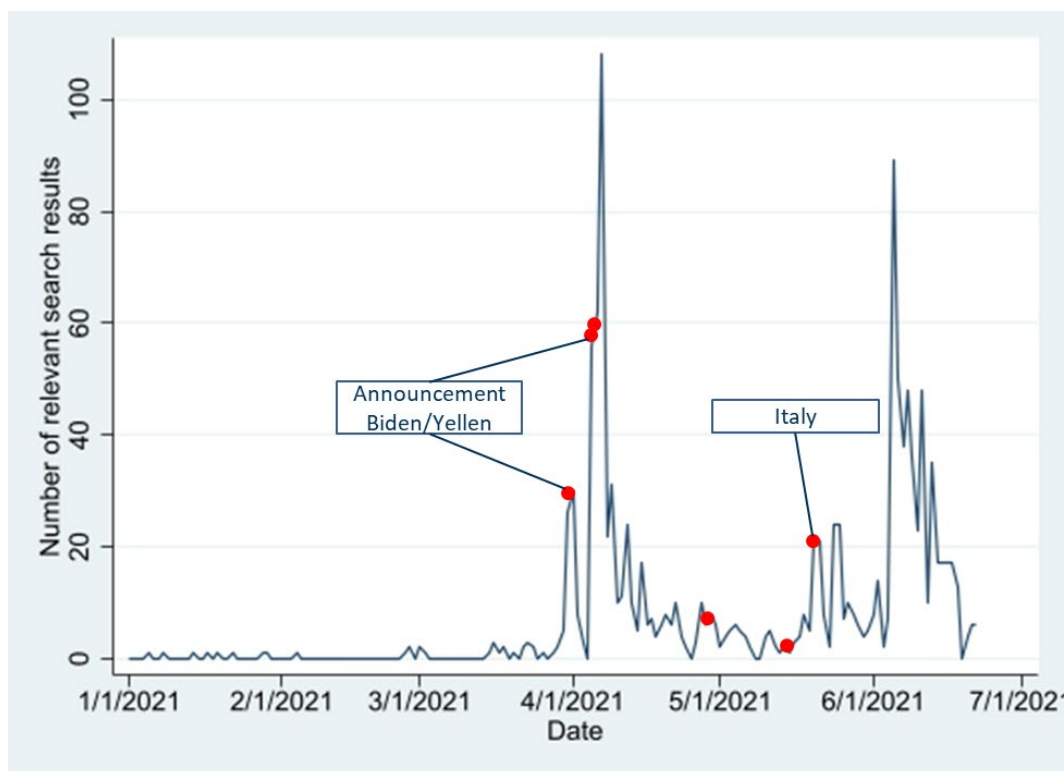
4.4.2.1 Concurrent Events

Regarding the concern of a concurrent event that might affect the stock prices of large European firms, we identify one potential event that took place on June 5, i.e., immediately after our alternative 3-day event window. On this date, the Group of Seven (G7) finance ministers announced during their meeting in London that they would support a deal on the introduction of a global minimum tax under Pillar Two. The deal on the global minimum tax was at that time negotiated among the members of the Inclusive Framework at the OECD and a final agreement was only reached by July 1 (OECD, 2021a). The goal of the global minimum tax is to reduce the incentive for aggressive tax planning by imposing a certain minimum tax

on low-taxed multinational firms. The commitment of the G7 could have affected stock prices during our event period only if the information on the announcement had been leaked to market participants before the meeting and, more importantly, if the statement increased the probability of a global solution on the minimum tax.

A thorough assessment of the evolution of the G7's announcement on June 5 reveals that the commitment of the G7 members was already publicly known prior to their meeting. The chances of striking a global deal on the introduction of a minimum tax increased substantially in early April 2021 when the Biden Administration announced that it would advocate a global deal on the minimum tax, resuming the multilateral cooperation halted under the Trump administration (Wall Street Journal, 2021). In the subsequent weeks, the remaining G7 countries publicly expressed their support for the US initiative. Figure 14 illustrates the media coverage of the global minimum tax, which spiked in April, and the respective dates, on which the respective G7 countries declared their support. The last G7 country, Italy, confirmed its commitment on May 21, i.e., eleven days prior to the agreement on the public CbCR. Thus, it seems highly unlikely that the common statement by the G7 finance ministers would have changed the perceived likelihood of a global deal for investors.

In a next step, we address the concern empirically by leveraging the fact that the global minimum tax would affect all firms with revenues exceeding EUR 750 million worldwide. In contrast, public CbCR only applies to European firms above this threshold. Suppose the result of the event study was attributable to investors anticipating the effects of a global minimum tax. In that case, the returns of large EU firms should not differ from those of large non-EU firms. Thus, we employ a difference-in-differences design to mitigate potential concerns about the G7 announcement. We obtain the stock market data for a comparable control group, which comprises two distinct sets of firms that should not be affected by the EU announcement due to their business sector or headquarter location. The first set consists of 4,594 firms that meet the revenue threshold of EUR 750 million but are headquartered outside of the EU. Thus, the

Figure 14: Commitment of G7 to the Global Minimum Tax

Notes: Figure 14 depicts the number of search results in the Dow Jones Factiva database, using the search term “global minimum tax” for the period from January 1 to June 22, 2021. Our search query results in 1,256 relevant publications that are depicted in the figure. The graph spikes in late March and early April when Joe Biden and Janet Yellen declared that the US would back a global deal on the minimum tax. The other red dots indicate the dates on which the remaining members of the G7 publicly announced their support of the US initiative.

firms are comparable in size characteristics but should not be directly affected by the reporting obligation.¹⁰⁹ The second set comprises a worldwide sample of 736 firms that meet the revenue threshold and operate in the banking or the extractive and logging sector. These firms are already subject to industry-specific public CbCR schemes and are therefore not affected by the additional reporting obligation.

Before we run the difference-in-differences analysis, we test whether the parallel trends assumption holds in the pre-event period. For parsimony, we focus on the last calendar month of our estimation period and group the firms’ daily stock market returns into 12 equally sized bins, i.e., each bin covers two trading days, similar to our event window in the main

¹⁰⁹ The compromise draft envisions that only the EU-subsidiary of a non-EU headquartered firm is subject to report on its EU operations. Hence, large non-EU firms should – if at all – be only marginally affected by the disclosure requirement.

specification. Subsequently, we estimate the average abnormal returns of the treatment firms relative to the control firms. Figure 15 visualizes the corresponding results. The coefficients are relative to the coefficient of the first bin in the pre-event period. The graph shows that the returns of the treated EU firms do not significantly differ from those of the control group firms before the event. Thus, the analysis provides confidence that the identifying assumption holds.

We continue our analysis on the extended sample and run a difference-in-differences regression using the following empirical design:

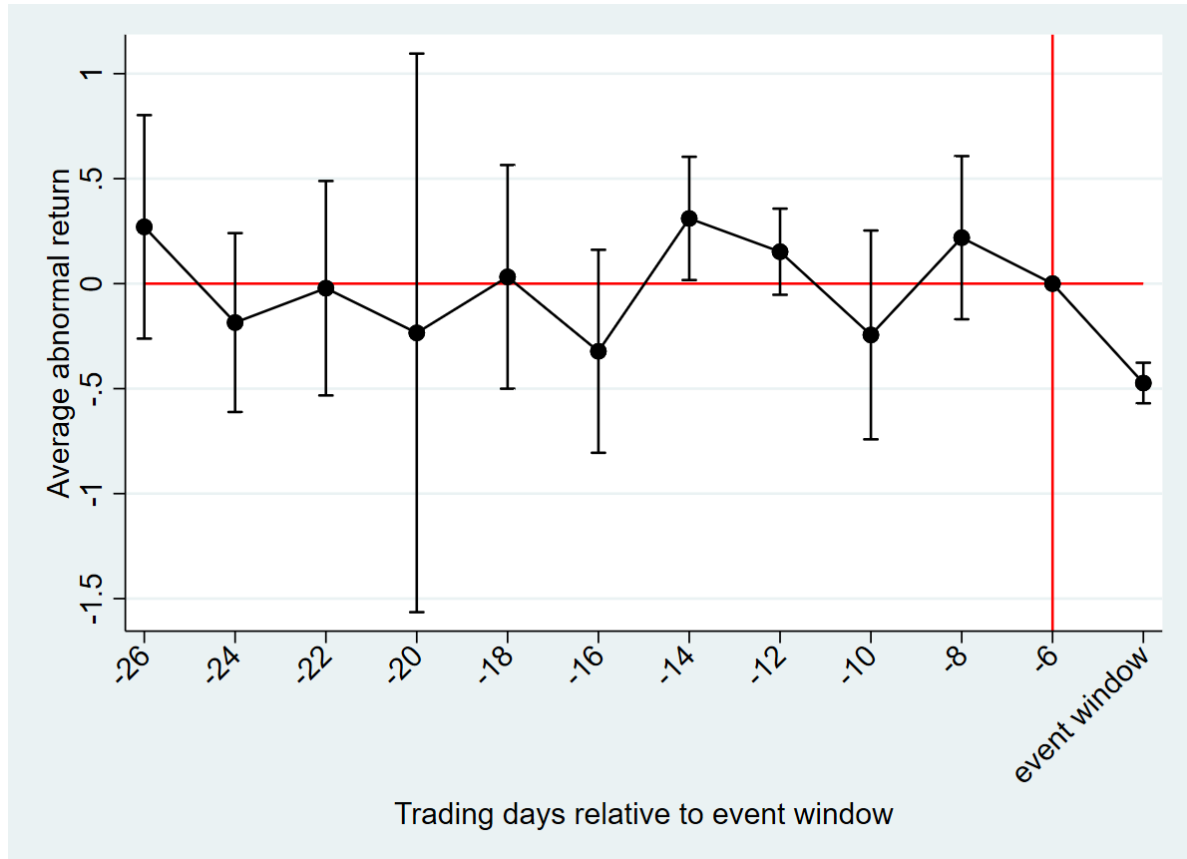
$$r_{it} = \alpha + \beta r_{mt} + \gamma Treatment_i * Event_t + \delta Treatment_i + \varphi Event_t + \varepsilon_{it} \quad (2)$$

where, similar to our main regression, r_{it} is the realized return of firm i on trading day t , r_{mt} is the realized return of the MSCI World and $Event_t$ is a dummy variable indicating trading days within the event period. $Treatment_i$ indicates whether the firm is part of the treatment group, i.e., whether the firm is affected by the EU announcement. ε_{it} is the error term and captures all effects that are not included in the model. Note that our initial empirical design allowed for an estimation of abnormal returns based on the deviation between the actual returns and the expected returns predicted by the CAPM. The difference-in-differences design now allows for the estimation of abnormal return deviations of affected firms relative to non-affected control group firms, which is captured by the new coefficient of interest, γ .

Table 14 summarizes the corresponding estimation results. We find that affected firms experience statistically significant average abnormal returns of -0.796% relative to the full set of control firms (column 1). We repeat the analysis for both subsamples separately and report the results in column 2 and column 3, respectively. The coefficient of interest remains negative and statistically significant for both control groups. The size of the coefficient is comparable between both specifications.

Overall, the comparison with two alternative control groups supports our assumption that the observed effect of the main analysis is attributable to the EU's announcement to introduce a public CbCR.

Figure 15: Comparison of Treated and Control Firms



Notes: Figure 15 depicts the results of testing the identifying assumption of parallel trends over the last calendar month in the pre-event period. The results are based on estimating the basic regression model from equation 2: $r_{it} = \alpha + \beta r_{mt} + \gamma Treatment_i * Event_t + \delta Treatment_i + \phi Event_t + \varepsilon_{it}$. *Treatment* is a dummy variable indicating that the firm is affected by the public CbCR. *Event_t* is a vector that groups the stock market returns into 12 bins. Thus, we rerun the regression with eleven additional dummies and interaction terms to measure the dynamic effects for alternative event days in the pre-period. The coefficient of interest is the coefficient of the interaction between *Treatment* \times *Event_t*. The plotted coefficients depict the average abnormal return of large European firms relative to control firms over one calendar month. The treatment group comprises 691 firms that are EU-based and whose consolidated turnover exceeds EUR 750 million in the two preceding financial years. The control group comprises 5,330 firms that are unaffected by the public CbCR scheme, either because they are operating in industries that were already affected by industry-specific CbCR schemes before, or because they are headquartered outside of the EU. The vertical lines represent the 95 percent confidence intervals. The 12 bins are equally sized and cover two trading days. All coefficients are relative to the first bin (-6) which contains the trading days from -7 to -6 before the event. To ensure comparability with our main analysis we exclude the five trading days immediately preceding the EU's announcement.

Table 14: Difference-in-Differences Results

	(1) All	(2) Non-EU	(3) Excl. Industries
Constant	0.080*** (2.676)	0.076** (2.578)	0.106*** (2.675)
Market Return	0.667*** (16.645)	0.657*** (16.790)	0.707*** (12.910)
Treatment x Event	-0.796*** (-8.817)	-0.782*** (-7.730)	-0.882*** (-9.464)
Treatment	0.027 (0.685)	0.032 (0.772)	-0.003 (-0.078)
Event	0.314** (2.080)	0.304* (1.872)	0.384*** (3.666)
Observations	1,583,523	1,389,955	375,301
Standard errors clustered on firm-level	Yes	Yes	Yes
Standard errors clustered on trading days	Yes	Yes	Yes
Firms	6,021	5,285	1,427
Adj.-R ²	0.05	0.05	0.06

Notes: Table 14 presents the regression results for our difference-in-differences specification, using equation 2: $r_{it} = \alpha + \beta r_{mt} + \gamma Treatment_i * Event_t + \delta Treatment_i + \phi Event_t + \varepsilon_{it}$. *Treatment* is a dummy variable indicating that the firm is affected by the EU announcement. *Event_t* is a dummy variable indicating trading days within the (0,1) event window. The coefficient of interest is the coefficient of the interaction between *Treatment x Event*. ε_{it} is the error term and captures all effects that are not included in the model. We define our variables in Appendix 9. Robust t-statistics in parentheses.

*, **, and *** indicate statistical significance at the 10, 5, and 1 percent levels, respectively.

4.4.2.2 Robustness of the Model

To corroborate our main results beyond the comparison of unaffected firms, we run a series of additional robustness tests, in which we alter the assumptions and parameters of our baseline analysis. Table 15 shows the corresponding results for the (0,1) event window. In column 1, we follow prior literature and employ the S&P Global 1200 as an alternative market proxy to the MSCI World (Dutt, Ludwig, et al., 2019; Johannesen & Larsen, 2016). The coefficient of interest increases slightly in terms of magnitude and remains statistically significant at the 1%-level. In column 2, we winsorize firm and market returns within the estimation and event periods at the 1st and 99th percentile. The outbreak of the COVID-19 crisis has led to increased volatility in the global capital market. By winsorizing, we aim to account for the impact of COVID shocks, such as the discovery of a new virus variant or the successful

test phase of a vaccine candidate. The corresponding results show that the alteration leads to a decrease in effect size by 0.048 percentage points to -0.436%. In column 3, we control for potential confounding events and exclude firms with an earnings announcement within a (-2,2) window around the event date. We retrieve earnings announcement dates from I/B/E/S and identify four firms that made announcements during that period. Given the small share of affected sample firms, it is not surprising that our coefficient of interest is hardly affected by their exclusion. The effect size remains almost unaffected by this alteration and statistically significant at the 1%-level. In column 4, we combine the winsorization and exclusion of firms with earnings announcements tests. The CAAR drops to -0.428% while remaining statistically

Table 15: Robustness Tests for June 2

	(1) S&P Global 1200	(2) Winsorize	(3) Announcements	(4) Winsorize & Announcements
Constant	0.107** (2.453)	0.084* (1.962)	0.107** (2.415)	0.085* (1.962)
Market Return	0.661*** (10.670)	0.653*** (9.971)	0.672*** (10.780)	0.654*** (9.968)
Event	-0.520*** (-3.555)	-0.436*** (-3.579)	-0.476*** (-3.850)	-0.428*** (-3.692)
Observations	181,733	181,733	180,681	180,681
Standard errors clustered on firm-level	Yes	Yes	Yes	Yes
Standard errors clustered on trading days	Yes	Yes	Yes	Yes
Firms	691	691	687	687
Adj.-R ²	0.06	0.07	0.06	0.07

Notes: Table 15 presents the regression results for a series of robustness checks, using the market model in equation 1: $r_{it} = \alpha + \beta r_{mt} + \gamma Event_t + \varepsilon_{it}$. r_{it} is the realized return of firm i on trading day t , r_{mt} is the realized return of the market portfolio (MSCI World) and $Event_t$ is a dummy variable indicating trading days within the (0,1) event window. ε_{it} is the error term and captures all effects that are not included in the model. Using the initial specification from our baseline analysis, we analyze the main event on June 2 using a (0,1) event window and an estimation windows of one year (i.e., (-266,-6)) across all specifications. Column 1 shows the results when using the S&P Global 1200 as an alternative benchmark portfolio to the MSCI World. Column 2 shows the results when winsorizing firm and market returns at the 1st and 99th percentile to limit the effect of potential outliers. Column 3 shows the results when excluding firms that made an earnings announcement in a (-2,2) window around the event date. In Column 4, we winsorize firm and market returns and additionally exclude firms with earnings announcements in a (-2,2) window around the event date. Robust t-statistics in parentheses.

*, **, and *** indicate statistical significance at the 10, 5, and 1 percent levels, respectively.

significant at the 1%-level. In Appendix 6, we conduct the same robustness tests for the alternative event date on February 25. The results are comparable to the baseline results and statistically insignificant suggesting that the inferences hold for different specifications. In addition, we alter the estimation period to a short-term 3-month window and replicate the baseline analysis and robustness tests for both event dates (see Appendix 7 and Appendix 8). The results are quantitatively and qualitatively similar.

Taken together, the analyses in this section show that our results are robust to changes in assumptions or parameters of our estimation approach. Our results remain similar in terms of magnitude and statistical significance. Hence, our main inference from Section 4.4.1 remains unaltered, supporting our view that the marginal capital market investor is negatively pricing in the EU announcement of the introduction of a public CbCR.

4.4.3 Economic Interpretation

Based on our main findings from the event study, we examine the economic magnitude of the overall negative capital market reaction. In a first step, we calculate the absolute firm value loss. More specifically, we compute the individual firm CARs and multiply them with the individual firms' market capitalization as of June 1, 2021, which is the day preceding our event window. Our results are depicted in Table 12. For the 2-day (alternative 3-day) event window, we derive a cumulative firm value loss amounting to EUR 48.113 billion (EUR 64.911 billion). Put into a meaningful perspective, the aggregated firm value loss derived from our main specification corresponds to 14.82% of corporate income taxes collected in the EU in 2020, respectively to 6.42% of the "NextGenerationEU" Recovery Fund that was set up by the EU in 2020 to mitigate the negative economic impact of the coronavirus disease.

As stock returns reflect investors' expectations of future cash flows, the documented firm value losses represent the present value of the expected future cash flow reduction. Two economic interpretations of this reduction are conceivable depending on the responsible channel. Assuming that the losses are exclusively attributable to the reputational cost channel,

the reduced returns are supposedly caused by higher tax payments by the affected firms. To avert reputational harm, companies are assumed to adopt less aggressive tax strategies and thus leave tax-saving opportunities unexploited. These higher tax payments lead to reduced after-tax profits and lower returns from an investor perspective. The higher tax payments would, therefore, result in a transfer of wealth¹¹⁰ from the company to society.¹¹¹

To the extent that the losses are exclusively attributable to the proprietary cost channel, the reduced returns would be considered to result from market distortions and an expected loss of market share and profitability of affected firms. In this case, there would be a transfer of wealth from EU companies to non-EU companies. We explore the role of these two channels in the next Section.

4.5 Heterogeneity Analysis

4.5.1 Data and Methodological Approach

After identifying an overall negative investor reaction, we aim to better understand the firm characteristics the marginal investor takes into consideration. As laid out in Section 4.2.2, our setting allows us to mitigate concerns regarding direct implementation costs and indirect costs from better-informed tax authorities being potential reasons for an adverse reaction. The remaining indirect costs can be classified as reputational costs from being publicly exposed as an aggressive tax avoider (regardless of whether such exposure was justified or not) and proprietary costs resulting from a public disclosure of sensitive financial information. We, therefore, expect that the effect size should be larger for firms that are more sensitive to

¹¹⁰ We point out that our methodology is not suitable to examine the actual welfare impact of the event, as the deadweight loss (amongst other parameters) is unclear. The explanations merely serve to provide an economic interpretation of the firm value loss.

¹¹¹ Although a wealth transfer from tax aggressive firms to society is the desired outcome of public CbCR, we stress that firms might also unjustifiably (i.e., even when not engaged in aggressive tax planning) face reputational concerns and therefore adjust their tax strategies. This might, for example, be because the general public lacks the expertise to correctly interpret the figures or because important information, e.g., on tax loss carryforwards, is not included in the reports.

reputational concerns and firms situated in fierce competition. For our analyses, we thus extend our baseline model as follows:

$$r_{it} = \alpha + \beta r_{mt} + \gamma Event_t + \varphi I_i + \delta I_i * Event_t + \varepsilon_{it} \quad (3)$$

where I_i is a vector of firm-specific indicators. $I_i * Event_t$ is the interaction term of the indicator vector I_i and our dummy variable that indicates trading days within the event window. All other variables are as explained in equation 1. The new coefficient of interest is the coefficient of the interaction vector δ . To examine the role of the two cost channels separately, we determine meaningful measures that indicate the degree of reputational concerns and the fierceness of the competitive environment based on the extant literature. We explain and describe our choice of measures in the following.

4.5.1.1 Identification of Reputational Concerns

The most common proxy for corporate tax avoidance is the ETR of a firm. Using data from the consolidated financial statements for the financial year 2020 from Worldscope, we compute the cash ETR by dividing the income taxes paid (as stated in the cash flow statement) by the pretax income of the respective firms (Hanlon & Heitzman, 2010). We subsequently divide our sample firms into quintiles with respect to their cash ETR and define “ETR” as a dummy variable that assumes the value of 1 for firms in the first and second quintile. We assume that investors consider firms with low ETRs as potentially more tax aggressive and, therefore, more likely to face greater risk of public scrutiny.

Furthermore, we acknowledge that several empirical studies document a tax-driven allocation of intangible assets within a multinational corporation. Dischinger and Riedel (2011) find that a decrease in the average tax difference to the remaining group affiliates by one percentage point increases the focal affiliate’s level of intangible assets by 1.7%. Karkinsky and Riedel (2012) examine the impact of tax rates on patent locations and find that an increase in the corporate tax rate of 1 percentage point reduces the number of patent applications by 3.5-3.8%. Estimating a model of firm decisions, Griffith et al. (2014) identify corporate tax rates as

significant determinants in corporate patent location decisions. Heckemeyer et al. (2014) document that, conditional on the intensity of research & development activities of a firm, the level of intangible assets in the firm is associated with more tax planning efforts and ambitions. Thus, we argue that a higher intangible-to-total asset ratio might indicate higher and more sophisticated tax planning potential and, therefore, could serve as a proxy for investors to identify larger reputational risks. Thus, we compute the respective ratio based on the 2020 financial information in *Worldscope* and allocate our sample firms into quintiles. We define “Intangibles” as a dummy variable that assumes the value of 1 for firms in the fourth and fifth quintile with regard to the intangible-to-total-assets ratio.

Beyond tax avoidance measures, we argue that firms with higher salience to consumers are more exposed to public attention than other firms. In line with Dutt, Ludwig, et al. (2019), we, therefore, examine the difference in the effect size along the consumer proximity of firms. We define “B2C” (Business-to-Consumer) as a dummy variable that assumes the value of 1 for firms operating in industries with higher salience to consumers and 0 for firms operating in less salient industries. We manually classify firms to the B2C-category based on their 4-digit Standard Industrial Classification (SIC) codes available in *Orbis*.

Finally, following recent public calls for greater tax transparency in the context of sustainability reporting,¹¹² we acknowledge that investors perceive a firm’s tax strategy as a material part of the overall sustainability performance. We posit that firms with a weak pre-regulation ESG-performance might be more exposed to public scrutiny, as their additional CbCR disclosure is more informative about their actual commitment to responsible tax behavior vis-à-vis firms with an excellent ESG-performance. Thus, investors might expect higher reputational costs for weak ESG firms (Grewal et al., 2019). We obtain Refinitiv’s ESG-Scores from *Datastream* and focus on the Governance Pillar Score as taxes and CbCR are most likely

¹¹² See Section 4.2.2 for further explanations and references.

attributed to this category.¹¹³ The Governance Pillar Score reflects the weighted average rating of a firm based on the reported governance information and ranges from zero to 100. We define “ESG Score” as a dummy variable assuming the value of 1 for firms in the first and second quintile, i.e., firms with the lowest Corporate Governance Pillar ratings.

We drop firms with a negative pretax income, as the cash ETR is otherwise difficult to interpret (Bilicka et al., 2022; Dyreng et al., 2017; J. R. Robinson et al., 2010). To reduce the impact of outliers, we cut ETR and the intangible-to-total-assets ratio at 0 and 1 (e.g., Chyz et al., 2019; Joshi, 2020; Joshi et al., 2020).

4.5.1.2 Identification of the Competitive Environment

One of the most established metrics to measure the level of competition is the Herfindahl-Hirschman Index (HHI), which is frequently used by national antitrust agencies¹¹⁴ and the extant literature (Borenstein et al., 1999; Francis et al., 2013). The index measures the industry concentration by incorporating the relative market share of all firms. It is computed by summing up the squared market shares of each market player in a given industry. After multiplying the market shares by 100, the HHI assumes values between $\frac{10,000}{N} \leq HHI \leq 10,000$, where N represents the number of market players in the given industry. Higher index values indicate higher concentrations of market shares within a given industry and, thus, lower competition among firms in that industry. To calculate the HHI, we use BvD’s classification of industry peers in Orbis,¹¹⁵ which allows us to identify potential competitors of our sample firms and calculate the total turnover volume per industry as well as the individual market shares based on the available turnover information for the financial year 2019.¹¹⁶ In our analysis, we include

¹¹³ This assumption is based on the categorization of the GRI framework, which distinguishes between “Environmental”, “Social”, and “Economic” (equivalent to “Governmental”) topics. In untabulated results we increase the confidence in our results, using the overall ESG score instead of the Governance Pillar Score and find that our results remain robust to this alternative specification.

¹¹⁴ For instance the Norwegian Competition Authority, see <https://konkurransetilsynet.no/competition-has-been-stable-in-norway-for-the-last-decades/?lang=en> (accessed on October 1, 2021).

¹¹⁵ The classification is based on the four-digit NACE-industry codes, but more granular due to additional adjustments by BvD.

¹¹⁶ The year 2019 represents the most recent year for which we have financial information available in Orbis.

a dummy variable “HHI”, which assumes the value of 1 for firms in industries in the lowest two quintiles with regard to the HHI (i.e., industries with high competitive pressure) and 0 otherwise.

We acknowledge that concentration measures, in general, are imperfect proxies for the actual competitive environment within industries. Most importantly, they do not directly measure competition but rather the structural market outcome of competition (OECD, 2021b).¹¹⁷ Furthermore, we note that concentration measures on a stand-alone basis are limited to a static description of the market structure but do not account for dynamic developments. We address this issue and complement our analyses by using two additional dynamic indicators.

Our first indicator measures industry growth in terms of total turnover. We argue that industries with low turnover growth rates suggest higher competitive pressure on firms, as a firm’s market position may primarily be strengthened by retaining its customers and attracting the customers of competing firms, yet not through the attraction of new customers. Thus, we define “Turnover growth” as a dummy assuming 1 for firms in industries belonging to the first and second quintile in terms of turnover growth over a ten-year period and 0 otherwise.

The second indicator is derived from Porter’s Five Forces Model, in which the threat of an entry of new market participants is presented as a determinant for the dynamic rivalry within a given industry (Porter, 1980). Our approach is similar to Buijink et al. (1998), but we define a combined measure accounting for market entries and exits. More precisely, we calculate the growth rate in the number of competitors for each industry. Industries with high growth rates are considered more competitive. The dummy variable “Competitor growth” equals 1 for firms in industries belonging to the fourth and fifth quintile in terms of the respective competitor growth over a ten-year period.

¹¹⁷ For further shortcomings, see among others, Borenstein et al. (1999) and Matsumoto et al. (2012).

In the absence of observable characteristics that would enable us to delineate product markets,¹¹⁸ we emphasize that our approach to identify the competitive environment is based on industry classifications. Industry classifications are typically more broadly defined than product markets. In combination with the above-mentioned general shortcomings of concentration measures, we are hence cautious to interpret the results of our analyses regarding the competitive environment as causal links and consider them rather indicative.

The last indicator for proprietary costs in our analysis is the firms' medium- to long-term profitability. The rationale is that profitable firms usually have a competitive advantage (e.g., organizational capabilities or structure) that allows them to generate excess rents over a long period of time. We posit that the new disclosure requirement is more harmful for highly profitable firms which must disclose their organizational structure and sources of profitability in foreign markets. We use the five-year average return on assets (ROA) ratios from Worldscope as proxy for profitability. The dummy variable "ROA" equals 1 for firms belonging to the fourth and fifth quintile in terms of profitability.

To be included in the sample, we require firms to have the necessary information for the computation of all indicator variables, i.e., for the variables of both cost channels, available. Our procedure ultimately leads to a final sample of 410 firms for our cross-sectional heterogeneity analyses. We estimate equation 3 using the parameter values from our baseline analysis. That is, we analyze the investor reaction to the EU announcement on June 2, using a 1-year estimation window (-266,-6) and a 2-day (0,1) event window.

4.5.2 Findings

4.5.2.1 Heterogeneous Effects for Different Levels of Reputational Concerns

Our results for the heterogeneity analyses regarding different levels of reputational concerns are depicted in Table 16. Column 1 depicts the results for the ETR analysis using the

¹¹⁸ A common measure is the similarity of product descriptions in firms' 10-K filings (e.g., Hoberg & Phillips, 2016). However, such information is not available for our European sample.

2-day event window. In line with our expectation, our results show that the investor reaction is considerably stronger for more tax aggressive firms. While the average firm in the less tax aggressive sample experiences an abnormal stock price reaction of -0.522%, the average tax

Table 16: Cross-Sectional Results – Reputational Costs

	(1) Cash ETR	(2) Intangibles	(3) B2C	(4) ESG Score
Constant	0.096** (2.295)	0.107** (2.573)	0.093** (2.263)	0.093** (2.183)
Market Return	0.652*** (11.67)	0.652*** (11.67)	0.652*** (11.67)	0.652*** (11.67)
Event	-0.522*** (-3.001)	-0.460*** (-3.254)	-0.542*** (-2.935)	-0.508*** (-2.915)
ETR x Event	-0.149*** (-3.057)			
ETR	0.012 (0.797)			
Intangibles x Event		-0.306** (-2.326)		
Intangibles		-0.018 (-1.114)		
B2C x Event			-0.139** (-2.369)	
B2C			-0.008 (-0.437)	
ESG Score x Event				-0.183*** (-3.914)
ESG Score				0.019 (1.244)
Observations	107,830	107,830	107,830	107,830
Standard errors clustered on firm-level	Yes	Yes	Yes	Yes
Standard errors clustered on trading days	Yes	Yes	Yes	Yes
Firms	410	410	410	410
Adj.-R ²	0.08	0.08	0.08	0.08

Notes: Table 16 presents the regression results for a series of cross-sectional tests, using the market model in equation 3: $r_{it} = \alpha + \beta r_{mt} + \gamma Event_t + \phi I_i + \delta I_i * Event_t + \varepsilon_{it}$. r_{it} is the realized return of firm i on trading day t , r_{mt} is the realized return of the market portfolio (MSCI World) and $Event_t$ is a dummy variable indicating trading days within the (0,1) event window. I_i is one of four variables (ETR, Intangibles, B2C, or ESG Score) along which we conduct sample splits. ε_{it} is the error term and captures all effects that are not included in the model. We define our variables in Appendix 9. Robust t-statistics in parentheses.

*, **, and *** indicate statistical significance at the 10, 5, and 1 percent levels, respectively.

aggressive firm in terms of ETR experiences a -0.149 percentage points lower 2-day CAAR. The coefficient of the interaction is significant at the 1%-level. This finding is in line with the notion that investors expect firms to converge towards more conservative tax planning strategies in anticipation of increasing public pressure, which indirectly affects the expected value of cash flows due to foregone tax savings.¹¹⁹

Column 2 shows the results for the intangible assets analysis. The corresponding coefficient of interest is negative with a considerable effect size of -0.306% and statistically significant at the 5%-level. The finding indicates that investors expect firms with higher profit shifting potential to be more exposed to public scrutiny on their tax strategies.

The results for B2C are displayed in column 3. The coefficient of interest is negative and statistically significant at the 5%-level. The finding suggests that firms with high consumer proximity are more likely to face public scrutiny following the publication of the CbC reports.

The last column depicts the results for the sustainability performance. The coefficient of interest is negative and statistically significant at the 1%-level. Firms with weak ESG ratings in terms of corporate governance face a -0.183 percentage points lower 2-day CAAR compared to their counterparts with better sustainability performance. In sum, our findings imply that the marginal investor factors in the reputational risks associated with the disclosure requirement.

4.5.2.2 *Heterogeneous Effects for Different Levels of Competition*

Next, we explore the potential role of the second cost channel as a complementary driver of the overall negative investor reaction. Our results for the heterogeneity analyses regarding different levels of competition are presented in Table 17. We estimate equation 3 using each of our competitive intensity indicators individually.

¹¹⁹ In untabulated tests, we follow prior literature (Edwards et al., 2021; Joshi, 2020) and use alternative ETR-measures which account for (1) the effective and (2) the statutory tax rates of the firms' home country. Our results remain robust to this alteration.

Table 17: Cross-Sectional Results – Intensity of Competition

	(1) HHI	(2) Turnover growth	(3) Competitor growth	(4) ROA
Constant	0.099** (2.480)	0.100** (2.474)	0.107** (2.547)	0.094** (2.369)
Market Return	0.652*** (11.67)	0.652*** (11.67)	0.652*** (11.67)	0.652*** (11.67)
Event	-0.508*** (-6.315)	-0.680*** (-2.840)	-0.474*** (-2.572)	-0.538** (-2.666)
HHI x Event	-0.174 (-0.472)			
HHI	0.005 (0.399)			
Turnover growth x Event		0.238 (1.646)		
Turnover growth		-0.010 (-0.661)		
Competitor growth x Event			-0.266*** (-5.513)	
Competitor growth			0.027 (1.930)	
ROA x Event				-0.113* (-1.663)
ROA				-0.011 (-0.569)
Observations	107,830	107,830	107,830	107,830
Standard errors clustered on firm-level	Yes	Yes	Yes	Yes
Standard errors clustered on trading days	Yes	Yes	Yes	Yes
Firms	410	410	410	410
Adj.-R ²	0.08	0.08	0.08	0.08

Notes: Table 17 presents the regression results for a series of cross-sectional tests, using the market model in equation 3: $r_{it} = \alpha + \beta r_{mt} + \gamma Event_t + \phi I_i + \delta I_i * Event_t + \varepsilon_{it}$. r_{it} is the realized return of firm i on trading day t , r_{mt} is the realized return of the market portfolio (MSCI World) and $Event_t$ is a dummy variable indicating trading days within the (0,1) event window. I_i is one of four variables (HHI, Turnover growth, Competitor growth within a given firm's industry, and high ROA) along which we conduct sample splits. ε_{it} is the error term and captures all effects that are not included in the model. We define our variables in Appendix 9. Robust t-statistics in parentheses.

*, **, and *** indicate statistical significance at the 10, 5, and 1 percent levels, respectively.

Columns 1 shows the results for our concentration measure using the 2-day event window. The coefficient of interest for firms operating in less concentrated industries as indicated by the HHI amount to -0.174. The coefficient is, however, not significant at conventional levels.

Next, we look at industry growth as a measure reflecting the dynamic development of our sample firm industries. Column 2 depicts the results for the turnover growth analysis. The CAARs for firms operating in low-growth industries are slightly negative, whereas the coefficient on the interaction term is positive. Yet again, the coefficients are not statistically significant at conventional levels. Column 3 shows the results of our competitor growth analysis. Here, we find evidence supporting our initial expectation that differences in competitive intensity are priced in by the marginal investor. Our estimates suggest that firms operating in industries with high competitor growth rates experience significantly stronger negative CAARs, amounting to -0.266 percentage points.

Lastly, we turn to our alternative measure for proprietary costs, long-term profitability. The coefficient of interest in column 4 is negative and statistically significant at the 10%-level. The result suggests that investors expect that firms with sustained high profitability ratios might incur proprietary costs upon disclosure of their CbC reports vis-à-vis less profitable competitors.

Taken together, we document that highly profitable firms and firms in industries with higher growth rates in terms of the number of competitors are more affected by the regulation. However, we acknowledge the shortcomings of the measurement approach outlined in Section 4.5.1 and interpret our results as indicative of proprietary costs driving the overall negative investor reaction. In terms of the economic interpretation of this analysis, it can be noted that the results represent neither an exclusive transfer of wealth to society, nor an exclusive transfer of wealth to unaffected competing firms. Instead, our results indicate that both transfers are anticipated by investors.

4.5.2.3 *Relative Importance of Cost Channels*

Finally, we assess the relative importance of the two cost channels. For this purpose, we conduct an integrated analysis based on equation 3, using the four variables of the reputational channel analysis (i.e., ETR, Intangibles, B2C, and ESG Score) together with the four variables of the proprietary cost channel analysis (i.e., HHI, Turnover growth, Competitor growth, and ROA). The estimates of the corresponding interaction term coefficients are depicted in Table 18. Column 1 shows the estimates for the 2-day event window. We find that all proxies for reputational risks yield negative and statistically significant coefficients. We conclude that each proxy captures a distinct dimension of reputational concerns among investors. The magnitude of the estimated coefficients is highest for firms with a high share of intangible assets and firms with a high salience to consumers. Importantly, none of the coefficients of our proprietary cost proxies is statistically significant. The coefficients for firms operating in industries with high growth rates and for highly profitable firms remain negative but are no longer statistically significant at conventional levels.

Overall, the combined analysis of the two channels suggests that reputational risks associated with the disclosure are the dominating concern for investors. All four reputation variables have statistically significant negative coefficients, indicating that reputational concerns play a decisive role in the investor's assessment of the measure. While we document some evidence consistent with investors anticipating competitive disadvantages for affected firms, the proprietary costs seem to be of minor importance. From an economic perspective, this finding indicates that the wealth transfer portion towards society appears stronger than the wealth transfer towards unaffected competitors.

Table 18: Cross-Sectional Results – Relative Importance of Cost Channels

	(1) (0,1) Event window
Constant	0.084* (1.653)
Market Return	0.652*** (11.67)
Event	-0.108 (-0.742)
ETR x Event	-0.161*** (-2.630)
Intangibles x Event	-0.378** (-2.212)
B2C x Event	-0.236*** (-3.381)
ESG Score x Event	-0.173** (-2.171)
HHI x Event	-0.094 (-0.236)
Turnover growth x Event	0.158 (0.815)
Competitor growth x Event	-0.171 (-0.657)
ROA x Event	-0.112 (-1.583)
Observations	107,830
Standard errors clustered on firm-level	Yes
Standard errors clustered on trading days	Yes
Firms	410
Adj.-R ²	0.08

Notes: Table 18 presents the regression results for a series of cross-sectional tests, using the market model in equation 3: $r_{it} = \alpha + \beta r_{mt} + \gamma Event_t + \phi I_i + \delta I_i * Event_t + \varepsilon_{it}$. r_{it} is the realized return of firm i on trading day t , r_{mt} is the realized return of the market portfolio (MSCI World) and $Event_t$ is a dummy variable indicating trading days within the (0,1) event window. Vector I_i includes the eight variables of our cross-sectional analyses (i.e., ETR, Intangibles, B2C, and ESG Score for the reputational cost channel, respectively HHI, Turnover growth, Competitor growth, and ROA for the proprietary cost channel; Table 16 and Table 17). ε_{it} is the error term and captures all effects that are not included in the model. We define our variables in Appendix 9. For a clearer presentation of the results, base effect estimates (i.e., coefficient estimates of I_i) are not displayed in the table. Robust t-statistics in parentheses. *, **, and *** indicate statistical significance at the 10, 5, and 1 percent levels, respectively.

4.6 Conclusion

In this study, we examine the EU's announcement to introduce a public CbCR scheme in the night of June 1 to June 2, 2021. According to the draft directive, large European MNEs would be required to publicly disclose formerly confidentially reported key financials on a CbC basis. We employ an event study methodology to analyze the investor reaction on the capital market around the day of the announcement of a political agreement to introduce a cross-industry public CbCR scheme. Using daily stock return data, we document negative CAARs for up to two days after the event day. Contingent on the specification, the CAARs range between -0.484% and -0.660% for the firms in our sample, which translates into a monetary value drop between EUR 48 billion and EUR 65 billion. The findings remain persistent to changes in specifications and empirical approaches, controlling for potentially confounding events. Our findings suggest that investors expect the risks associated with public CbCR to outweigh potential benefits from a more extensive information environment or more sustainable corporate tax strategies.

Adding upon these findings, we further identify potential channels to explain our results. Our setting enables us to mitigate concerns that costs of compliance and costs resulting from increased tax authority scrutiny are potential drivers of a negative investor reaction, given that firms were previously already required to confidentially report CbCR data to the national tax authorities. That leaves reputational concerns from public scrutiny and potential competitive disadvantages as possible drivers. The results of our cross-sectional analyses indicate that investors are indeed concerned about reputational risks associated with the disclosure requirement. We observe significant differences in effect sizes between B2C firms, firms with lower ESG Scores and ETRs as well as firms with higher profit shifting potential as indicated by the intangible-to-total assets ratio.

With regard to the proprietary cost channel, we find that firms with higher long-term competitor growth rates experience significantly stronger negative abnormal returns than firms

with lower growth rates. Moreover, the stock market reaction is stronger for firms with higher long-term profitability, which are likely to suffer more from the disclosure of confidential business information on a per-country basis. These findings are consistent with the notion that public CbCR might involve the disclosure of proprietary information to competitors.

While our results show that both cost channels are taken into consideration, reputational concerns seem to dominate over potential competitive disadvantages from an investor perspective. Thus, a major part of the losses in firm value is likely to be attributable to anticipated changes in firms' tax planning behavior and a subsequent decrease in corporate tax savings.

Overall, our findings provide a meaningful contribution to currently ongoing discussions among politicians and standard setters on the costs and benefits of increasing tax transparency. In the US, for instance, the Disclosure of Tax Havens and Offshoring Act, which provides for a similar extension of the existing confidential CbCR to a public CbCR, awaits approval by the Senate. Additionally, the world's most widely applied sustainability reporting standard, GRI, features a new module on taxation, including a public CbCR, effective as of 2021. When considering the introduction or the particular design of comparable public CbCR rules, legislators and standard setters should be aware that mandatory public tax transparency results in substantial costs. Against this background, decision-makers should carefully consider the merits of such public disclosure schemes.

5 Assessing Stakeholder Comments in the OECD 2020 Review of CbCR¹²⁰

5.1 Introduction

The inclusion of Action 13 on “Transfer Pricing Documentation and Country-by-Country Reporting” in the OECD’s Action Plan on BEPS led to a remarkable change in the area of corporate tax transparency. The purpose of the measures was to improve tax authorities’ efficiency in conducting high-level risk assessments for detecting and reducing aggressive tax planning strategies (OECD, 2015). In the Action 13 Final Report, the OECD proposed a three-tiered approach to standardize transfer pricing documentation and equip tax authorities with aggregated data on the global allocation of economic activity among jurisdictions. Over 100 jurisdictions had implemented a domestic framework for CbCR by December 2020, i.e., only five years after the release of the Final Report. In addition, 83 jurisdictions had information exchange mechanisms in place.¹²¹ The widespread implementation illustrates the global relevance of the concept.

Despite its successful adoption, the strengths and limitations of CbCR have been subject to controversial discussions among policymakers, practitioners and scholars since the initial proposal. The debate mainly focused on the effectiveness in identifying aggressive tax planning activities, the appropriate use of the reports and increased tax controversies arising from unilateral transfer pricing adjustments (Evers et al., 2017; Hanlon, 2018).

Given the novelty of the measure and the discussions around the reporting mandate, the Inclusive Framework instructed the OECD to monitor the implementation of CbCR in regular peer reviews. In addition, the participating countries agreed that the OECD should evaluate Action 13 no later than by the end of 2020 to assess the need for potential modifications

¹²⁰ This section is joint work with Miles Schönrock and Christoph Spengel. It has been published in the *World Tax Journal*, Vol. 14, Issue 2, June 2022, pp. 262-284. We thank the anonymous reviewers for their constructive comments and suggestions which have improved this manuscript.

¹²¹ For an overview, see <https://www.oecd.org/tax/automatic-exchange/country-specific-information-on-country-by-country-reporting-implementation.htm> (accessed on October 15, 2021).

(OECD, 2015). In spring 2020, the OECD initiated a public consultation process inviting interested parties to publish their view on the current CbCR approach. The process proceeded largely unnoticed by the broader audience due to the pandemic and the global attention devoted to the negotiations on Pillar One and Pillar Two. While the stakeholders' comments were discussed during a virtual event in June 2020, no formal conclusions on necessary changes or further steps have been published by the OECD so far.

Thus, many aspects remain unresolved, leading to the important questions of what we have learned over the past years and whether the concept is fit for purpose. This section aims to answer these questions by synthesizing the discussion about the current CbCR approach and examining the modifications proposed during the consultation process. The assessment is based on a qualitative content analysis of the arguments and opinions stated in the comments of different stakeholder groups. These documents provide relevant insights on practical challenges identified by practitioners and offer a rare opportunity to examine the positions of a diverse group of stakeholders with differing backgrounds. Based on the assessment, the authors identify key areas that require timely adjustments and derive clear policy recommendations for moving forward with CbCR.

The findings to the above questions are important in the light of the latest developments in the field of tax transparency. In the context of non-financial disclosure, tax transparency is on the agenda of sustainable reporting standards. One example is the new “GRI 207: Tax” standard, which entails a public CbCR template and detailed reporting elements on the approach of MNEs to tax and tax compliance (GSSB, 2019a). In November 2021, the European Parliament formally adopted the public CbCR mandate for MNEs located in EU Member States, thereby abandoning the confidentiality principle agreed on in the Action 13 Final Report.¹²²

¹²² See Directive 2021/2101/EU.

The remainder of the section is structured as follows. Section 5.2 provides a summary of the OECD public consultation document, which laid the basis for the consultation process. The methodological approach of the content analysis is described in Section 5.3, followed by an overview of the results in Section 5.4. The identified topics are discussed in detail in Section 5.5, while Section 5.6 summarizes the main findings and recommendations.

5.2 The 2020 Review of BEPS Action 13

Pursuant to its mandate to review the CbCR measure in 2020, the OECD published a consultation document on its website on February 6, 2020. The document outlines important points of discussion, their respective benefits and risks and necessary changes to implement the modifications. All interested stakeholders were invited to publish their view on the current CbCR approach until March 6, 2020, and explain which modifications they wish to see discussed and undertaken and what additional benefits and risks each proposal contains. The main objective was to allow external stakeholders to contribute to the further development of CbCR (OECD, 2020c).¹²³ The reports have been disclosed on the OECD website and selected reports were presented by the respective stakeholders in virtual consultation meetings held on May 12-13, 2020. Since the public consultation meeting, no modifications or next steps have been announced by the OECD.

The consultation document is structured into three chapters. Chapter 1 outlines the benefits of a consistent and standardized Master File for a CbC report and explains how standardized requirements would provide more consistent information and reduce administrative costs for all stakeholders. Comparable benefits can also be expected for a standardized Local File. However, standardization is less crucial here since the Local File has always been prepared separately on a jurisdictional level (OECD, 2020c). Chapter 1 includes a

¹²³ The OECD encouraged stakeholders to primarily respond to the points of discussion mentioned in the document, but stakeholders were invited to comment on additional aspects (OECD, 2020c).

reminder to all interested stakeholders that CbCR data is to be used as a high-level risk assessment tool (OECD, 2020c).

Chapter 2 discusses modifications related to an expanded scope of the CbCR approach. The OECD outlines several situations where particular revenue items or company structures are currently not covered by the adopted CbCR approach. For instance, the current standard neither includes single entities operating through one or more permanent establishments (PEs) nor enterprises operating through the common control of individuals. For the latter, in some jurisdictions, wealthy individuals or families hold investments directly through a non-corporate investment vehicle exempted from the preparation of a CbC report even if the sum of the group revenues exceeds the revenue threshold (OECD, 2020c). In addition, jurisdictions currently differ in their practice on including extraordinary income or income and losses from investment activities. Although both items (except for dividends and interest payments) usually do not represent a permanent part of an MNE's operating activities, they can still account for a large fraction of the company's revenues and their inclusion would ensure consistent treatment of all items irrespective from which source the income is derived (OECD, 2020c).

To deal with the general issue that MNEs have to set up reporting systems for a single year, it is further discussed whether introducing a multi-year approach would improve the current reporting requirements and which form such an approach should take. A multi-year approach would take the revenues of several preceding fiscal years into account instead of a single year. Proposals vary from averaging the revenues of a certain number of preceding fiscal years to mandating disclosure only if the two or two of the four preceding fiscal years exceed EUR 750 million (OECD, 2020c).

Since the introduction of the CbCR rules in 2015, local currencies' exchange rates have fluctuated compared to the euro, resulting in significantly higher or lower thresholds than the equivalent EUR 750 million revenue threshold. The introduction of a rebasing mechanism realigning the non-Euro thresholds to ensure equivalency with the initially established

EUR 750 million would result in greater consistency across different jurisdictions. The technical options for such an approach vary across proposals to allow jurisdictions to rebase at any time, at a fixed point every five years or only when the local currency has valorized or devaluated a fixed percentage rate from the original Euro exchange rate (OECD, 2020c).

Paragraph 54 of the Action 13 Final Report explicitly prescribes a new discussion of the established revenue threshold for the 2020 review process (OECD, 2015). Therefore, a section on whether the consolidated group revenue threshold should generally be reduced has been included in the second chapter of the consultation document.

Chapter 3 is related to the content of CbC reports. In principle, reporting can be based on aggregated or consolidated data. Aggregated data sums up the separate information for all constituent entities in each jurisdiction. Consolidated data adjusts for the transactions between constituent entities within the same jurisdiction. It eliminates technical flaws such as double counting of intra-group revenues of subsidiaries operating in the same jurisdiction and the multiple inclusion of the same capital under the “stated capital” column (OECD, 2020c). Relatedly, the document outlines several approaches to address the reporting issues of transparent and stateless entities in Table 1 of the CbC report. Lastly, numerous items are proposed to be disclosed in additional columns in Table 1. These items include intra-group transactions such as royalties, service fee incomes, interests paid to and received from constituent entities, as well as total related-party expenses. Moreover, R&D expenditures and deferred taxes are also discussed as additional items.

5.3 Qualitative Analysis of Public Comments

5.3.1 Methodology

To ensure a structured analysis of the stakeholder comments, the concept of a qualitative content analysis has been applied. The key objective of this method is to classify extensive texts into reduced content categories, thereby receiving reliable and comparable statements (Elo & Kyngäs, 2008; Mayring, 2014; R. Weber, 1990). The information contained in the data remains

uncompromised (Mayring, 2014). The research question and selected points of analysis determine the contents to analyze and to create (Elo & Kyngäs, 2008; Schreier, 2014). The data is then assigned to defined categories, representing a determined set of criteria that distinguishes it from the others.

Following existing literature and due to the extensive guidance given by the OECD consultation document, a deductive approach has been applied. Following this approach, the data is organized and evaluated according to a framework drawn from previous studies and literature. Topics are initially classified into categories based on that framework (Potter & Levine-Donnerstein, 1999). As the analysis proceeds, categories and coding schemes can be adapted, extended or refined (Hsieh & Shannon, 2005).

The analysis covers all comments¹²⁴ submitted and reported by interested stakeholders to the OECD between February 6 and March 6, 2020, until 6.00 p.m. (Central European Time). The comment by Invest Europe was received four days after the deadline, on March 10, 2020. The comment by the Union of Finance Personnel in Europe was submitted in French and is therefore excluded from the analysis to ensure a consistent application of the content analysis method. The material contained in the remaining 78 comments is analyzed in its entirety with a particular focus on the following aspects:

- 1) Which potential modifications to the content, scope, and general implementation procedure of the BEPS Action Plan 13 do stakeholders view as most important?*
- 2) What aspects do stakeholders evaluate positively?*
- 3) Are there any differences in opinion between certain stakeholder groups?*

¹²⁴ The comments are made publicly available by the OECD at <https://www.dropbox.com/s/qovaugzkxsym3ia/oecd-public-comments-received-2020-cbc-review.zip?dl=0> (accessed on January 28, 2022).

5.3.2 *Definition of Stakeholder Groups*

The opinions of the 78 stakeholders are very heterogeneous. We define four different stakeholder groups to identify potential response patterns based on stakeholders' backgrounds. The "Business representatives" category generally includes all company representatives, business associations, business federations and companies of all sizes. With 50 respondents, this is by far the largest group. The second largest group contains a total of 20 comments by members of NGOs, trade organizations, labor organizations and expert networks. This group is labeled "NGOs and trade & labor organizations" and analyses CbCR more from a public and employee perspective and not from the strict corporate perspective of the first group. Lastly, two smaller groups covering other viewpoints have been created. The "Investors" category consists of four investment organizations or representatives and their views on CbCR. The "Others" group includes the standpoints of three individual respondents and many US senators who published one comment together (see Table 19).

Table 19: Sample Composition

Stakeholder Group Name	Number of Respondents
Business representative	50
NGOs & trade/labor organizations	20
Investors	4
Others	4

Notes: Table 19 depicts the composition of the 78 stakeholder reports commenting on the OECD consultation document.

5.3.3 *Classification of Topics and Weighting Scheme*

Operational definitions for categories have been determined using the topics proposed by the OECD in the consultation document and issues identified in prior literature to include all relevant content points from the stakeholders' comments (Hsieh & Shannon, 2005). Under the deductive coding strategy, the category system is continuously refined to assign statements unequivocally to one category (Hsieh & Shannon, 2005). Each main category consists of several subcategories. The subcategories have been assigned a "+", "-", or "0" depending on

whether the stakeholder was in favor of (+), against (-) or had a conflicting (0) opinion on the points raised under this category. It is important to note that it has been evaluated whether the central message of the comment significantly tended towards one direction. A statement has been assigned a “0” in cases where the stakeholder provided arguments for both tendencies, stated that their members had divided opinions or accentuated the need for further analysis or progress before making a final decision. To enable a quantitative comparison between the trends of each main category and to analyze the relationship between the main category and its subcategories, a percentage system has been introduced, evaluating a favorable opinion (+) with a rating of 100%, a conflicting opinion (0) with 50% and an opposing view (-) with 0%. For each main category, the rating is calculated by dividing the sum of the ratings for a comment’s subcategories by the number of rated subcategories included under this main category.

The following six categories summarize the main discussion points on potential modifications:

(1) Uniform rules: the general “Uniform rules” category refers to all references made towards reducing the discrepancies of CbCR requirements in different jurisdictions. The category covers inconsistencies concerning content, format, timing or threshold of the Master File, Local File or notification requirements. It is mainly provided in response to the points raised under question number 3 of the OECD consultation document (OECD, 2020c). It contains comments on the inconsistencies of definitions in different jurisdictions and the lack of clear guidance stressed by numerous researchers.

(2) Adjustments related to the threshold: this category includes all debated adjustments related to the applicable CbCR threshold. It contains the subcategory “Reduction of the selected threshold”, which targets all benefits, risks and proposals for future proceedings concerning the currently established revenue level of EUR 750 million. Implications resulting from the current threshold level are a widely discussed issue in research papers and a concrete point outlined by

Table 20: Main Categories and Subcategories

Main Category Name	Assigned Subcategories
1) Uniform rules	a) Uniform rules
2) Adjustments related to threshold	a) Reduction of the selected threshold
	b) Currency rebasing
	c) Multi-year approach
3) Expanded scope	a) Single entities operating through PEs
	b) Groups under the common control of individual(s)
	c) Extraordinary income
	d) Investment activity
4) Reporting format	a) Use of aggregated instead of consolidated data
	b) Reporting of transparent and stateless entities
5) Inclusion of additional information	a) Additional columns Table 1
	b) Deferred taxes
	c) R&D information
	d) XML-Information
6) Public disclosure of CbCR	a) Public disclosure obligation
	b) Convergence towards GRI standard

Notes: Table 20 displays the six main categories (left column) and 16 subcategories that are assigned to the main categories (right column). The subcategories assigned to a main category always start with the bullet a).

the OECD under questions 10 and 11 (OECD, 2020c). Furthermore, this category comprises opinions about “Currency rebasing” and “Multi-year approach”. The concrete content points have been summarized under Section 5.2 and refer to questions 12-18 and 25-26 of the consultation document (OECD, 2020c).

(3) Expanded scope: the “Expanded scope” category includes multiple subcategories that extend the scope to company structures and revenues that are currently not included. It covers suggestions on how to deal with revenues resulting from “Extraordinary income” or “Investment activity” and whether to include “Single entities operating through PEs” and “Groups under the common control of individuals”. The details have been described under

Section 5.2 and deal with the content of questions 4-9 and 19-24 of the OECD consultation document (OECD, 2020c).

(4) Reporting format: conceptual changes to the source of data and the overall approach have been continuously discussed over the years. To evaluate the willingness to make conceptual changes to the current CbCR data format, the subcategory “Use of aggregated instead of consolidated data” has been added. It includes all opinions regarding the usefulness of consolidated or aggregated data as the primary data source.¹²⁵ The second subcategory, “Reporting of transparent and stateless entities”, covers comments on whether and to what extent transparent and stateless entities should be reported in the CbC reports (OECD, 2020c).

(5) Inclusion of additional information: the general category “Inclusion of additional information” adheres to the admittance of any additional content points and therefore comprises numerous subcategories, namely “Additional columns Table 1” and the machine-readable “XML information” (extensible markup language). Although the inclusion of deferred taxes and R&D expenditures is effectively an additional column to Table 1, these items were often discussed separately, with many stakeholders arriving at a dissenting conclusion in comparison to the main category. Consequently, subcategories “Deferred taxes” and “R&D information” have been created to analyze their usefulness separately. The percentage system is advantageous here to compare each stakeholder’s general willingness to include additional items in the CbCR template and evaluate which specific individual items provide the greatest additional benefits. The category includes, among others, the items “total employee costs” and “intra-group royalty payments”. Furthermore, all aspects are outlined under questions 31-33, 36-40 and 41-43 of the OECD consultation document (OECD, 2020c).

(6) Public disclosure of CbCR: albeit not included in the OECD consultation document, several stakeholders expressed their point of view on the public disclosure of the CbC reports.

¹²⁵ The naming of the category does not represent a personal opinion, but is supposed to facilitate the interpretation of the valuations (+/0/-).

In light of the recent policy developments in the EU, the aspect was included as a separate category, which was subdivided into the general view on public disclosure and convergence of the OECD approach towards the GRI standard.

5.4 Summary of the Comments

A lack of uniform rules is the major concern throughout most comments submitted to the OECD. In total, 48 stakeholders (see Table 21) mention the issues arising from unharmonized requirements in different jurisdictions. An average approval of 98% represents a rare consensus among stakeholders and highlights the importance of complementary measures to ensure globally harmonized requirements for all stakeholders.

Table 21: Results – Main Category Level

Main Category Name	Average Approval	Total Comments
Uniform rules	98%	48
Adjustments related to threshold	69%	54
Expanded scope	54%	41
Reporting format	75%	54
Inclusion of additional information	35%	52
Public disclosure of CbCR	74%	34

Notes: Table 21 depicts the average approval and number of total comments for each priorly defined main category (see Section 5.3.3). The calculation of the approval rates is explained in Section 5.3.3.

The proposal for adjustments related to the threshold received overall positive feedback. Business representatives strongly support introducing a multi-year approach (87%) and a threshold rebasing for currencies not denominated in Euro (88%).¹²⁶ A currency rebasing mechanism was only opposed twice. In general, NGOs and trade & labor organizations share the opinion of business representatives on the multi-year approach (63%) and a rebasing mechanism (100%). Responses to the discussion about reducing the applicable threshold are, however, mixed. The average approval equals 46%, and a detailed analysis reveals a clear

¹²⁶ The evaluation of the categories by stakeholder group is summarized in Appendix 10 and Appendix 11, respectively.

difference in opinion between individual stakeholder groups. The average support of NGOs and trade & labor organizations is close to full approval (95%), while most business representatives reject this proposal.

Opinions on the main category, “Expanded scope”, and its subcategories differ significantly between stakeholder groups. Support from NGOs and trade & labor organizations is very high (94%), while the business representatives’ approval only comprises 43%. The dissent between the groups is stable across all subcategories. Although only eight NGOs and trade & labor organizations published their view on the relevant subcategories, a clear tendency towards expanding the scope and including additional group structures and corporate revenues of all kinds can be observed. A majority of business representatives support the inclusion of single entities operating through PEs (55%), but a minority is in favor of including extraordinary income (26%).

A clear majority of respondents argues that no conceptual changes should be made to the current reporting format (75%). Especially business representatives oppose a change from aggregated to consolidated data with an average denial of 85% (43 comments). Most business representatives also reject proposals to disclose more information on the type of transparent and stateless entities. In contrast, such changes are advocated by NGOs and trade & labor organizations with an average approval of 88% (8 comments).

The inclusion of additional information received mixed reviews with a total average approval of 35% from 52 respondents, similar to the proposals to reduce the threshold. Notably, only 6 out of 20 NGOs and trade & labor organizations commented on one of the numerous subcategories concerning proposals to include specified additional information. Their average approval of 85% is outweighed by the number of responding business representatives (44 out of 50) who oppose any changes. The proposed additional columns for Table 1 are firmly rejected (average approval of 17%). An interesting observation can be made about deferred taxes and R&D information. R&D information as a separate column of Table 1 is specifically

rejected multiple times (overall approval of only 20%, see Table 22), while deferred taxes received a comparably higher overall rating of 40%. The proposal to include XML information is evaluated slightly favorably (52%) but uncovers an apparent disagreement of opinions even within the individual stakeholder groups.

The discussion on the necessity of public disclosure shows the most considerable discrepancies between the opinions of business representatives and those of NGOs and trade & labor organizations. Only the American Sustainable Business Council, representing mainly small businesses outside the scope of CbCR, and Anglo American PLC, who already voluntarily adheres to the GRI standard, are business representatives arguing in favor of introducing a public disclosure requirement (American Sustainable Business Council, 2020; Anglo American PLC, 2020). All other business representatives bring forward situations where public disclosure would result in significant and unjustified competitive disadvantages for MNEs. In total, 24 investors and NGOs and trade & labor organizations have responded to the consultation document and disclosed their views on the CbCR approach. Most parties have provided their opinion on whether CbCR data should be made publicly available, all arguing in favor of such a change. The fact that this point was not even up for discussion in the consultation document underlines these stakeholder groups' primary intention to provide their views on CbCR. Moreover, 19 stakeholders from all groups proposed to converge the current CbCR approach towards the GRI standard.

Table 22: Results – Subcategory Level

Subcategory Name	Average Approval	Total Comments	“+” Comments	“0” Comments	“-” Comments
Uniform rules	98%	48	47	0	1
Reduction of the selected threshold	46%	50	22	2	26
Currency rebasing	89%	23	20	1	2
Multi-year approach	83%	23	18	2	3
Single entities operating through PEs	66%	28	14	9	5
Groups under the common control of individual(s)	46%	27	9	7	11
Extraordinary income	42%	25	9	3	13
Investment activity	50%	26	11	4	11
Use of aggregated instead of consolidated data	77%	51	35	9	7
Reporting of transparent and stateless entities	59%	27	14	4	9
Additional columns in Table 1	16%	49	4	8	37
Deferred taxes	40%	26	9	3	14
R&D information	20%	23	3	3	17
XML-Information	52%	27	11	6	10
Public disclosure obligation	71%	31	22	0	9
Convergence towards GRI standard	100%	19	19	0	0

Notes: Table 22 displays the results of the evaluation of the qualitative content analysis on the subcategory level. The approval rates, as explained in Section 5.3.3, are directly calculated from the number of “+”, “0” and “-” comments. The subcategories are defined in Section 5.3.3.

5.5 Assessment of Potential Modifications to CbCR

5.5.1 Uniformity of Rules

The high average approval of 98% demonstrates the conjoint expectation that harmonized rules reduce administrative costs and efforts. At the same time, harmonized rules would benefit users of the reports with greater comparability and transparency. A primary concern are the differing notification requirements. Business representatives strongly argue in favor of reducing or even eliminating the burdensome notification requirements according to which constituent entities are required to notify the tax administration annually whether a filing obligation applies.

Jurisdictions established different notification requirements regarding deadlines, modes of transmission and formats of restitution. The business representatives argue that this diversity has led to significantly increased compliance burdens, higher workloads, and consequently higher costs for filing MNEs. All commentators further agree that aligning the CbCR approaches would help to reduce the administrative and compliance burden for MNEs. In particular, Master and Local Files deviating from the OECD guidance result in onerous compliance and monitoring costs, increased uncertainty, and lack of transparency. Master File requirements often differ in format, process, threshold and content. Stakeholders criticize that even a translation into the local language is required in some countries. For instance, in Mongolia or Russia, a translation is mandatory, causing high additional costs for MNEs due to the size and complexity of the Master File (The South African Institute of Chartered Accountants, 2020). Additional information requirements like a value chain analysis (China), financing arrangements (India) and an increased scope (Peru) further complicate the reporting process (MEDEF, 2020).

The commentators argue that the OECD should urge jurisdictions to use a streamlined approach that reduces administrative costs and uniformly presents information to tax authorities and users of the reports. Regarding the Master File, the requirements ideally should become fully standardized so that MNEs only need to prepare one single file and authorities can easily share their experiences across jurisdictions. One possible way might be to facilitate the exchange of information, for instance, by introducing a Master File exchange mechanism similar to the CbC reports (Japan Foreign Trade Council, 2020) and thereby automatically demonstrate the benefits of higher comparability. A minimum threshold for Master Files would increase the uniformity and ease the burden on MNEs (EBIT, 2020). However, it is unlikely that developing countries would adhere to these rules since this would further limit their access to tax-relevant information. To reduce the additional burden resulting from inconsistent

notification requirements,¹²⁷ Ernst & Young (2020) and AstraZeneca (2020) propose to incorporate the notification information in the local filing procedure, thereby avoiding a separate notification process. This process has already proven effective in China and France. At the least, the submission date should be harmonized with the CbCR date, or the notification requirement could be reduced to an initial notification obligation. Subsequent notification duties would only be required if changes to the group structure or threshold occur. To eliminate many of the discussed issues arising from differences in definition, the OECD should follow the definitions of an internationally accepted accounting standard or clarify the exact meaning of critical terms.¹²⁸ Other differences, for instance, between the country code of the International Organization for Standardization (ISO) and the US standard, should be eliminated (Business at OECD, 2020; USCIB, 2020). The importance of uniform and clear rules can directly be observed in the uncertainty of many stakeholders whether the wording “entities” in the current reporting standard refers to legal or to constituent entities and, consequently, whether PEs are already included under the current reporting requirements. Clarifications and additional guidance should be quickly published and easy to understand to reduce inconsistencies and misinterpretations. Uniform standards have proven effective in other accounting and tax measures by reducing costs and burdens for all involved parties and should be continuously enforced (Casi et al., 2019).

5.5.2 Adjustments Related to Threshold

5.5.2.1 Reduction of Revenue Threshold

Concerning adjustments to the threshold, the main argument provided by NGOs and trade & labor organizations is that in smaller and developing economies, companies with much lower revenues are responsible for significant shares of the economic activity. A lower threshold

¹²⁷ See <https://www.oecd.org/tax/automatic-exchange/country-specific-information-on-country-by-country-reporting-implementation.htm> (accessed on October 15, 2021).

¹²⁸ Stated capital, for instance, can be translated into German either as equity capital or subscribed capital.

would enable tax authorities in developing countries to access the CbC information of relevant companies. Many comments refer to the EU's official definition of small and medium-sized enterprises, which establishes that companies exceeding EUR 50 million in revenues are effectively classified as large corporations. It is proposed to reduce the CbCR threshold to EUR 50-100 million, thereby including 85-90% of the MNEs and eliminating the disadvantages for purely domestic corporations of all sizes. On the other hand, business representatives argue that the current threshold represents a good balance between achieving an effective high-level risk assessment and holding the burden placed on MNEs and tax authorities at a reasonable level. The current threshold includes roughly 90% of the global corporate revenues, but only 10-15% of the MNEs, which better balances the effectiveness of the CbCR approach as a risk assessment tool with the costs of complying, according to the business representatives. Concerning compliance costs, one should keep in mind that the absolute costs of preparing the documents are equal for corporations of all sizes, resulting in a relative overburden on smaller and less profitable companies. Furthermore, tax authorities currently face a data overload in processing the amount of information resulting from the CbC reports. Reducing the threshold would only intensify this problem (Accountancy Europe, 2020; Flick Gocke Schaumburg, 2020; Loyens & Loeff, 2020).

There is little clarity on the usefulness of the current threshold to date. Given that tax authorities supposedly do not have the current capacity to process all information in a reasonable time, a reduction of the threshold seems disadvantageous for all directly involved parties. Since there have been only limited insights into the effectiveness and usefulness of the current reports for tax authorities, reducing the threshold should be postponed to a later date (EBIT, 2020; EFAMA, 2020; U.S. Chamber of Commerce, 2020; USCIB, 2020). It is a realistic assumption that the current revenue threshold is already effective in achieving a high-level risk assessment. In addition, a reporting obligation at a revenue level of EUR 750 million is consistent with the recently agreed on threshold for Pillar Two. This would improve the

consistency and uniformity of the rules. The limited access of developing countries to CbC information is a valid concern, especially since the tax revenue loss is estimated to be relatively higher for developing countries. However, smaller tax authorities may be even more resource-constrained (Moss Adams, 2020). To address the issue of restricted access to CbC reports, the OECD should urge major economies to improve the exchange of information with developing countries by concluding information exchange agreements.¹²⁹

5.5.2.2 Technical Adjustments to Applicable Threshold

The high approval – in all stakeholder groups – of technical threshold adjustments underscores the efficiency of the proposed modifications to solve existing problems and improve consistency across countries. The new currency rebasing mechanism should be characterized by simplicity, neutrality and low implementation costs. Rebasing at a fixed point in time, for instance, every five years, seems to fulfill most of these requirements. Special consideration has to be given to countries facing high annual inflation rates. Applying a rebasing mechanism every five years in such countries would result in many companies dropping below the revenue threshold of EUR 750 million due to a devaluation of the local currency.¹³⁰ These problems can be avoided by adopting a correction mechanism, which rebases the threshold when the local currency change exceeds plus or minus 10-20% in comparison to the Euro (OECD, 2020c). The rules should be established in cooperation with the tax administrations of the affected countries. Still, a currency rebasing mechanism alone would increase volatility and lead to the reporting obligation not consistently applying to companies with a constant revenue level in local currency close to the threshold (KPMG, 2020). This issue can be substantially mitigated by introducing a multi-year approach.

As articulated by many stakeholders, a multi-year approach offers the most significant direct benefits of all technical adjustments. It would reduce the number of one-time reporting

¹²⁹ For a more detailed discussion on the limited access for developing countries, see Knobel & Cobham (2016).

¹³⁰ A reverse effect arises in case of a devaluation of the Euro or compared to the local currency.

obligations by lowering the effect of revenue outliers and increase the stability of the filing population. Adopting an efficient multi-year approach would significantly alleviate the negative impact of currency fluctuations or extraordinary income. Under a multi-year approach, extraordinary income might be included in the CbCR requirements. Again, the selected approach should be straightforward and easy to enforce. One shortcoming of size thresholds is that they incentivize firms to report revenues just below the applicable threshold.¹³¹ MNEs use various earning management tools, including changes in the accounting policy and manipulation of real activities to recognize and shift revenues to an earlier or later period (Roychowdhury, 2006; Zang, 2012). Averaging the revenues of multiple preceding years would reduce the medium-term benefits of revenue shifting because such behavior negatively affects future profits (Degeorge et al., 1999). Thus, a multi-year approach using the average revenue of the directly preceding three years seems most appropriate in connecting simplicity with the objectives and advantages of considering the revenues of multiple years.

5.5.3 *Expanded Scope*

5.5.3.1 *Adjusting the Scope of Group Structures*

It is generally acknowledged that it would be fair and consistent to include all MNEs in the scope of CbCR, irrespective of their corporate structure. However, for both single entities operating through PEs and groups under the common control of individuals, major concerns about accessing and disclosing the relevant information have been expressed. For instance, the Capital Markets Tax Committee of Asia (2020) highlights that partnerships are very common in Asia. Still, they operate under strict confidentiality rules, making the required information inaccessible. In addition, several stakeholders have the understanding that single entities operating through PEs are already included under the current CbCR rules. Some respondents interpret the obligation to include the information of each “entity” established in the standard

¹³¹ For recent empirical evidence, see Hasegawa et al. (2013); Hoopes et al. (2018); Hugger (2020).

as a reporting requirement for each constituent entity instead of each legal entity.¹³² Expanding the scope to single entities operating through PEs or groups under the common control of individuals requires legislative changes and causes a significant additional compliance burden for all affected parties. Therefore, incremental usefulness of the rules would be required. The benefit of expanding the scope is questionable because only a small number of MNEs above the threshold operate through such a group structure. The tax experts of Flick Gocke Schaumburg (2020) furthermore state that single entities operating through PEs do not have the possibility to carry out profit shifting and should consequently not be included in the scope of CbCR. For groups under the common control of individuals, the severe complications of accessing the relevant information outweigh the limited incremental benefits. Additionally, Loyens and Loeff (2020) points out that the investment entity consolidation exemption should continue to apply, which is a general accounting rule exempting cases where the investment company is not involved in the management of the investee companies or the holding is undertaken with investment motive and exit strategy. This would further limit the number of included companies. In summary, the inclusion of groups independent of their corporate structure would level the playing field between firms. However, the practical risks and complexity outweigh the benefits.

5.5.3.2 *Broadening the Definition of Corporate Profits*

The inclusion of extraordinary income is questioned by many stakeholders who warn that this may penalize investments abroad and result in 1-year exceedances of the reporting threshold by companies normally operating far below it. In general, extraordinary income does not reflect the ordinary course of business and consequently does not add value to the high-level risk assessment. Its inclusion may increase challenges and inconsistencies in interpreting data. However, extraordinary income increases the company's tax liability in the year in which

¹³² See for instance, EBIT (2020); Ferrovial Group (2020); Indonesian Institute of International Tax Studies (2020); IntercontinentalHotels Group (2020).

the income accrues. Its inclusion in the consolidated revenue would, therefore, serve the purpose of the CbCR. As discussed above, the multi-year approach would reduce the distortive effect of a one-time revenue outlier.

Similar reasoning applies to gains and losses from investment activities. In general, investment activities are not part of a group's operating activities and are therefore not the primary target of CbCR. Nevertheless, investment income may represent an essential and enduring source of MNEs business income (e.g., interest) and account for a large part of annual revenues. To limit the additional compliance burden, it seems reasonable, as proposed by three stakeholders, to include only companies where investment is a core activity (e.g., exceeding 25% of corporate revenues) (EBIT, 2020; Ferrovial Group, 2020; PwC, 2020). Below that threshold, the high-level risk assessment would possibly become distorted. Importantly, dividend income, which is usually tax exempt in the country of the direct owner, should be excluded from the profits of the parent entity to avoid double counting of the income. The OECD recommended the exclusion of dividends in its guidelines to Action 13, but current legislation differs across countries (Horst & Curatolo, 2020). The OECD should, therefore, push for a harmonized treatment of dividends.

5.5.4 Reporting Format

The main concern is that a change to consolidated data or the application of entity-by-entity reporting instead of CbCR would incur high additional implementation costs and efforts because the newly established reporting systems would need to be changed entirely. The introduction of entity-level reporting misses the original intention and idea of CbCR to enable an overview on the jurisdictional level. Moreover, tax authorities would have to change their implemented systems and process a much higher quantity of data, especially if fund vehicles, dormant and smaller entities form part of an MNE (The Association of British Insurers, 2020; The Investment Association, 2020). The commenting NGOs and trade & labor organizations share the concerns regarding a change to entity-level reporting instead of CbCR.

The consultation document explicitly states that multinational groups and business associations evaluate consolidated data as more straightforward and not significantly more burdensome (OECD, 2020c). However, this argument is not supported by public comments. Many stakeholders consider the current CbCR approach as sufficient to enable tax authorities to achieve the goals of a high-level risk assessment. Still, some express their support for consolidated data instead of aggregated data due to the expected higher data quality. Consolidated data eliminates revenue double counting of constituent entities in the same jurisdictions and presents a more realistic view of corporate activities. Nevertheless, these advantages were known prior to the original implementation. The objective of CbCR is not to enable direct inferences on profit-shifting behavior but to allow tax authorities to conduct targeted tax audits and thereby make disclosure sufficiently expensive and risky for MNEs to adapt their behavior (Müller et al., 2020; OECD, 2015). Deciding to change the approach now would be premature and would increase the costs for companies and authorities. An interesting compromise is the idea of KPMG (2020), stating that instead of reporting based on consolidated data, MNEs should use aggregated data but eliminate related-party revenue and stated capital from within the same jurisdiction to avoid the duplication of revenues. Thereby, tax authorities receive a more realistic revenue number and MNEs do not face the high burden of providing consolidated statements on a country level. An alternative solution is to include an additional column stating the number of domestic transactions (Mazars, 2020).

A practical solution to mitigate the double counting of profits from stateless or transparent entities would be to report the information of transparent entities in the jurisdiction in which they are formed if they are owned by a constituent entity in the same jurisdiction (i.e., “domestic scenarios”) (KPMG, 2020).¹³³ According to the OECD, this would cover a large number of cases involving transparent entities (OECD, 2020c). The remaining information in the

¹³³ For a detailed discussion of the double counting issue, see Horst & Curatolo (2020).

“stateless” category of Table 1 would only include cases with higher profit-shifting risks of particular interest for tax authorities. Possible simplifications, comparable to the examples outlined above, need to be further evaluated as they would make major changes obsolete and save significant resources.

5.5.5 Additional Items or Data

The amount of additionally required mandatory information should be reduced to a minimum. For proposals such as additional columns to Table 1, incremental benefits are limited. If tax authorities need additional information, they either already have access via the Local or Master Files or can easily request the information through local audit powers. The fact that the proposed additional items are currently not included does not hinder an effective high-level risk assessment. Deloitte (2020) even recommends eliminating existing columns (in particular, “Tangible assets other than cash and cash equivalents” and “Stated capital and accumulated earnings”) from Table 1 because they do not advance effective risk assessments. From an academic perspective, it is important to note that the effect of CbCR on profit-shifting behavior can only be reliably measured if additional items such as total assets, staff costs per country and intra-group royalty payments are available (Dutt, Nicolay, et al., 2019). However, the inclusion of such items becomes only relevant if it is decided to disclose CbCR information to the public or selected researchers. Furthermore, the different existing definitions and understandings of the additionally proposed items (e.g., R&D information, ISO vs. US standard, the definition of employees in certain countries) would result in inconsistent reports and should not be included. Feedback by the tax authorities would provide valuable insights into the need for additional information and should be awaited before making a final decision.

The most visible direct benefits would occur with the inclusion of deferred taxes. As explained by the OECD (OECD, 2020c), this would help tax authorities to detect whether an existing mismatch between tax paid and tax accrued is an indicator of profit-shifting activities or a result of temporary differences. Contrary to the statement of the OECD, most business

representatives see challenges and a high additional effort accompanying the inclusion of deferred taxes. The usefulness of such information for removing timing differences is generally acknowledged. However, fluctuations and different treatments of recognition exemptions and valuation allowances might complicate the risk analysis (Japan Foreign Trade Council, 2020; Keidanren, 2020; The Association of British Insurers, 2020). These challenges that the OECD has not broached in the consultation document need to be considered.

For the proposals to include XML information, it is generally argued that including such information would help align the XML schema with the CbCR template and facilitate the exchange of information without significantly increasing the effort for MNEs. However, many stakeholders are doubtful whether data like tax identification numbers or addresses provide tax authorities with added value for performing a high-level risk assessment, mainly because such data can be accessed via the Local File. This argument is, for once, negligible. Enabling an efficient automatic exchange mechanism has to be one of the primary goals of the OECD in the long term. Since reports are currently exchanged using the CbCR XML schema, significant resources of tax administrations would be saved if the templates are aligned. Therefore, the main question should be whether the saved efforts of tax administrations are more significant than the one-time expenditures for changing formal, administrative and legal procedures. After a careful and detailed evaluation in cooperation with the tax administrations, a final decision should be made.

5.5.6 Public CbCR

5.5.6.1 Expected Consequences of Public CbCR

Regarding the introduction of a mandatory public CbCR, business representatives articulate a general concern that highly confidential information on strategic and operational decisions is displayed to competitors, suppliers and customers. Companies criticize that misinterpretation may cause unjustified accusations since the interpretation of complex tax data might be difficult for non-tax professionals. The business representatives generally conclude

that a public disclosure requirement goes far beyond the initially established objective of a high-level risk assessment tool.

In the opinion of NGOs and trade & labor organizations and investors, the main benefit of making public disclosure mandatory is to hold tax aggressive firms accountable and ultimately reduce tax avoidance activities, creating a level playing field. Increased transparency would foster the public debate on what an appropriate tax system should look like and pressure policymakers to take more effective steps. The claim by business representatives that CbC reports contain commercially sensitive information is opposed by the argument that there have been no distortions in the EU banking or extractive industry, where similar disclosures have been mandatory for many years. According to several commentators, public disclosure would significantly lower investment risk as investors could evaluate tax strategies and tax risks. Public CbCR would allow investors and workers to make informed decisions and pursue their rights. In addition, many stakeholders argue that not the OECD approach, but the GRI standard would be the best solution to disclose such information publicly. The stakeholders opine that the GRI standard would enable a higher level of consistency and uniformity by correcting significant technical flaws of the OECD approach (such as missing consolidated accounts, common data sources, intra-group transactions and stateless entity reporting).¹³⁴ The higher technical quality of the data would ideally benefit all users and the GRI would ultimately result in lower compliance costs due to its simplicity.

One main benefit of public disclosure is equal access to CbC reports for all interested parties, which would make the discussion about automatic and more extensive exchange mechanisms obsolete. Several commentators expect that the public disclosure of CbCR would result in better-informed citizens who can pressure managers and corporations to reduce their profit-shifting activities. The same argument was put forward in recent negotiations about the

¹³⁴ See for instance, ActionAid (2020); Anglo American PLC (2020); The Professional Institute of the Public Service of Canada (2020).

introduction of a public CbCR in the EU. The public debate about Starbucks' tax practices in the UK is a prominent example of how reputational risks from questionable tax practices may materialize (Reuters, 2012). Empirical studies underscore the effect of corporate tax strategies on consumers' attitude towards the firms and provide evidence that managers adjust the level of tax avoidance to avoid reputational costs (Antonetti & Anesa, 2017; Austin & Wilson, 2017; Dyreng et al., 2016; Hardeck et al., 2021). Firms would likely anticipate such reputational threats and adjust their tax strategies in the case of a public disclosure requirement. Beyond direct pressure on companies, higher public awareness of tax issues might also prompt politicians to eliminate profit-shifting opportunities from national tax codes and improve tax enforcement (Clausing, 2020b).

At the same time, the disclosed data is prone to misinterpretation even by tax professionals who are familiar with the complexity of tax laws and the interplay of tax systems. There are several valid economic reasons for low cash effective tax rates, such as inter-periodic loss carry-forwards or accelerated depreciation regimes. However, these explanations are not directly observable from the disclosed data. Moreover, interested public parties would likely be unable to process the amount of information provided in public CbCR without supporting IT systems. Consequently, public attention would focus on the most visible financial items of well-known companies like retail businesses or digital companies. To prevent potential misinterpretation, firms will have to disclose additional information to explain the driving factors behind low tax positions in a public reporting mandate. Still, Lagarden et al. (2020) conclude that public CbCR reduces information asymmetries between MNEs and the general public only marginally.

5.5.6.2 Initial Evidence on Public Disclosure Regimes

So far, public CbCR requirements are limited to the European banking sector and European firms in extractive industries. The EU introduced the transparency measure for European banks as part of the CRD IV in 2013. Despite its purpose to regain "the trust of

citizens [...] in the financial sector”¹³⁵, the empirical evidence on the effectiveness of the measure is mixed. Studies suggest that affected banks reduce profit-shifting activities among subsidiaries. Moreover, banks seem to have increased their effective tax rates if they are especially exposed to public scrutiny (Joshi et al., 2020; Overesch & Wolff, 2021). However, these studies find no evidence of a general effect of the transparency regulation on banks’ tax avoidance (R. J. Brown, 2020; Joshi et al., 2020; Overesch & Wolff, 2021). This implies that banks are able to either substantiate their tax arrangements in a tax audit or to substitute them with alternative tax strategies. R. J. Brown et al. (2019) show that the public reports are, nevertheless, informative on the existence and scale of banks’ tax haven presences because the information cannot be inferred from other corporate disclosures, e.g., the geographic segment disclosure in financial statements.

Some stakeholders suggest using public CbCR information for procurement decisions (e.g., public funding, contracts) (CICTAR, 2020). This proposal illustrates the economic risk that such an approach inheres for businesses. Many comments seem to ignore that most tax avoidance strategies are legal, and the tax loopholes are mostly known to interested parties and government representatives. An effective long-term reduction of profit-shifting behavior can best be achieved by minimizing the differences between national tax laws and closing these loopholes. Moreover, first studies indicate that the current confidential OECD approach induced substantial changes to MNEs’ tax planning behavior (De Simone & Olbert, 2022; Joshi, 2020). The additional effect of public scrutiny on the level of tax planning is, therefore, questionable.

The investors that participated in the consultation process claim that the disclosure of CbC reports improves the assessment of financial and economic risks (Group of Investors, 2020; Norges Bank, 2020; PRI Association, 2020). Increased tax transparency provides a

¹³⁵ CRD IV, recital 52.

clearer picture of foreign activities and facilitates the monitoring of corporate managers, thereby limiting the risks of extensive profit shifting and private rent extraction (Bennedsen & Zeume, 2018; Desai et al., 2007). However, an encouraging effect on corporate profit shifting is also conceivable. Shareholders might exert pressure on managers of corporations with relatively less tax avoidance (Blank, 2014; Cockfield & MacArthur, 2015), or managers might change their tax strategy after observing higher tax avoidance by their direct competitors who do not comply with the social norm of paying their fair share of taxes (Gino et al., 2009). Notably, the position of the investors contradicts empirical findings on capital market reactions to the introduction of public CbCR regimes (Dutt, Ludwig, et al., 2019; Johannesen & Larsen, 2016; Müller et al., 2021). For the recent agreement on the public CbCR requirement in the EU, Müller et al. (2021) document a significant drop in stock prices of affected European companies. Their findings suggest that most capital market participants expect that the costs associated with the disclosure outweigh potential benefits. These costs seem to reflect reputational and proprietary risk of disclosing sensitive business information to competitors. Especially unilateral reporting obligations like public reporting in the EU may result in competitive disadvantages relative to foreign competitors. Thus, the claims made by the investors in the public comments do not appear to be representative of the views of the majority of market participants.

5.6 Conclusion

The comments received on the public consultation process during the 2020 review stress the need to refine the current CbCR concept, which has become a cornerstone of the international tax system. It is generally acknowledged that adjustments can only be justified if they increase the usefulness of the reports while mitigating administrative costs. The following conclusions should be drawn from the discussion above.

Considering the novelty of CbCR and the ongoing implementation in some countries, the focus should be on technical adjustments and streamlined requirements that would ensure consistency across jurisdictions and legal certainty for all parties in the short term. One

promising area of improvement is the multi-year approach that would trigger the reporting obligation for firms that exceed the applicable threshold in each of the two immediately preceding financial years.¹³⁶ The multi-year approach accounts for exceptional revenue spikes and would allow for the inclusion of extraordinary income and investment activities. Another minor adjustment should be the introduction of a currency rebasing mechanism to improve the administration and functioning of CbCR. These benefits outweigh the reasonable one-time efforts arising from the necessary changes in regulations and guidance. In addition, the OECD should renew its call for harmonized rules, including uniform notification requirements, and encourage the members of the Inclusive Framework to adopt Master File and Local File requirements that are in line with the purpose of CbCR.

Significant conceptual changes, such as to the reporting format, are currently disproportionate and should, therefore, be postponed to the next review in 2025. Several commentators also highlight this conclusion (e.g., IFSP, 2020). The main reason is that practical experience on the relevance of the reports as a transparency measure is scarce. In Germany, for instance, tax audits still concern periods prior to the implementation of CbCR, which makes an evaluation of the incremental usefulness of the reports to tax authorities not yet possible (Flick Gocke Schaumburg, 2020; TEI, 2020).

The same argument applies to the inclusion of additional reporting items in Table 1. Tax authorities should articulate whether they require additional information (i.e., R&D, deferred taxes) to assess transfer pricing risks properly. Importantly, any steps in this direction should be aligned with the outcomes of the current negotiations on the global minimum tax. The Inclusive Framework announced on October 4, 2021, that the tax rate test should be calculated on a jurisdiction-by-jurisdiction basis using financial accounting income with certain adjustments. Thus, CbCR may serve as a primary information source for tax authorities to

¹³⁶ The same requirement applies for the public CbCR in the EU, see Article 1, para. 2 of Directive 2021/2101/EU.

assess and compare effective tax rates under the minimum tax regime. In this scenario, the inclusion of deferred taxes in Table 1 might be imperative.

Finally, regarding the discussion on mandating public disclosure of CbCR, it remains questionable whether and to what extent the advocated benefits (i.e., fairer tax systems, better-informed investors) of public tax transparency will materialize. Some MNEs like Vodafone Plc or Unilever Plc started to publish CbCR-related information to signal their level of tax compliance to a broad audience (Unilever Plc, 2021; Vodafone Plc, 2021). The voluntary reporting approach increases the credibility of the signal and allows MNEs to set themselves apart from tax aggressive peers. Reporting guidelines such as the sustainability reporting standard on taxation under the GRI framework help to standardize the disclosure and leave sufficient discretion for MNEs to decide on the extent of disclosure. Voluntary disclosure is therefore preferable over a mandatory disclosure regime. However, the EU has taken the lead on tax transparency and other countries might follow in the next years. The political decision on public CbCR is the latest development in the field of international tax transparency that has advanced quickly over the last two decades. Ideally, this approach should be coordinated via the Inclusive Framework to ensure a level playing field for corporate taxpayers.

Overall, the widespread global adoption of CbCR within a few years underlines its integral function for national tax authorities to ensure appropriate taxation of MNEs. Despite its current limitations, the concept is likely to gain more relevance over the following years.

6 Summary

Tax transparency has become a central mechanism to prevent international profit shifting and to protect tax bases. This thesis provides valuable insights for academics, policymakers, and practitioners by focusing on four research questions in the context of corporate tax transparency. First, what is the current state of academic research and which aspects should be addressed by future studies? Second, can tax transparency positively influence consumers' trust in service providers on digital platforms in the sharing economy? Third, how do investors react to the EU's announcement to increase public tax transparency by introducing a public CbCR for large European MNEs? Lastly, what modifications should be made to the OECD's existing CbCR framework to ensure consistency and effectiveness of the rules?

- (1) Answering the first research question is important and timely given the high practical relevance of the topic and the rise in empirical studies in recent years. The diverse landscape of tax transparency rules can be structured along two dimensions. More precisely, different tax disclosure types can be characterized by considering the recipient of the information (private vs. public) and the degree of obligation (mandatory vs. voluntary). Existing studies on the determinants of tax disclosure decisions suggest an ambiguous relationship with respect to the level of tax avoidance. While tax aggressive firms are more inclined to conceal tax-related information, they also try to legitimize their tax arrangements or to reduce information asymmetries resulting from their tax avoidance activities. Most empirical studies have investigated the effects of tax transparency regulations on firms and their stakeholders. In sum, their findings challenge the expectation that mandated tax disclosure efficiently achieves the envisioned goal of reducing tax avoidance. Despite the substantial progress in recent years, the survey of the extant literature has identified several promising avenues for future research. Future studies should, for instance, attempt to advance our understanding of the role of executives in corporate tax disclosure decisions. Moreover,

future research should shed light on how the disclosed information impacts the decision-making and actions of the recipients of the disclosure (e.g., tax authorities or consumers).

- (2) Section 3 investigates consumer responses to tax transparency in the sharing economy and addresses the second research question which has been identified as a research gap in Section 2. Using an online experiment, Section 3 analyzes the effect of a tax compliance label on consumers' trust in the service provider on a digital platform. The sharing economy is a particularly interesting setting not only because of its growing economic relevance but also because it is prone to tax evasion, which may lead to mistrust in service providers. The findings of the experiment reveal that the public commitment to tax compliance increases the trust of consumers in the service provider and, subsequently, the intention to book with the tax-compliant provider. The results imply that public tax transparency may be beneficial in settings that involve a high degree of uncertainty for consumers.
- (3) The costs and benefits of a public CbCR have been controversially discussed for many years. Section 4 examines the third research question by analyzing the stock market reactions to the surprising agreement on a public CbCR for European firms. The results provide insights into investors' expectations about the effects of the new regulation. The negative abnormal returns for potentially affected firms after the announcement document that the disclosure is perceived as costly even though the information is already known to tax authorities. The cross-sectional analyses imply that investors expect the disclosure to involve reputational and proprietary costs. Thus, the findings indicate that investors anticipate that the new disclosure requirement will be more costly for tax aggressive firms, which are the primary target of the disclosure requirement. However, this goal may be achieved at the cost of competitive disadvantages resulting from the disclosure of commercially sensitive information.
- (4) The last research question is addressed by combining practical insights from different stakeholders with findings of academic research. Action 13 has been an integral but novel

concept in the OECD's action plan against base erosion and profit shifting. The qualitative content analysis of the comments on the OECD's consultation document reveals a clear demand for further harmonization and technical adjustments to the existing rules. While not envisioned in the consultation document, the topic of making the reports publicly available was addressed by many stakeholders. Public CbCR disclosure will likely gain more relevance in the following years as more companies adopt the GRI-reporting standard. In addition, several legislators have announced or consider requiring the public disclosure of previously confidential reports. Ideally, such fundamental changes should be coordinated via the Inclusive Framework to avoid competitive disadvantages and to ensure legal certainty.

In summary, the dissertation addresses different aspects of corporate tax transparency: Recent studies have advanced our understanding of the determinants for and the consequences of corporate tax transparency. Still, further research on the impact of increased tax transparency on different stakeholder groups is encouraged to inform policymakers and businesses to what extent the proposed costs and benefits of (public) tax disclosure materialize. The analyses in this dissertation provide some insights into this question: First, voluntary tax transparency in the form of a tax compliance label can increase the trust of consumers in the service provider on digital sharing platforms, i.e., in settings with high information asymmetries. Second, the capital market reacts negatively to the EU's announcement to introduce a public CbCR, which requires the disclosure of previously confidential information. The findings imply that the mandated disclosure is expected to target tax aggressive firms, but it might also involve proprietary costs for affected firms. Third, the confidential CbCR has become the most prominent tax transparency measure as evidenced by its widespread adoption. Despite the current trends to make the reports publicly available, it seems advisable to focus on technical modifications to reduce complexity and to ensure consistency with its envisioned purpose before considering additional disclosure requirements.

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APPENDIX**A. Appendix to Section 2**

Appendix 1: Overview of Selected Tax Disclosure Rules and Frameworks

I. Disclosures Issued by Firms

A. Financial Reporting

Topic / type of disclosure	Relevant standards	Content of disclosure (only selected items)	Place of disclosure
Breakdown of tax expense and of pre-tax income	US GAAP: 17 Code of Federal Regulations (CFR) § 210.4-08(h)	<ul style="list-style-type: none"> Components of income (loss) before income tax expense as either <ul style="list-style-type: none"> Domestic Foreign Components of income tax expense; amounts applicable to the following items shall be stated separately for each major component: <ul style="list-style-type: none"> US federal income taxes Foreign income taxes Other income taxes <p>Amounts applicable to foreign income (loss) and amounts applicable to foreign or other income taxes which are less than five percent of the total of income before taxes or the component of tax expense, respectively, need not be separately disclosed.</p>	Statement of comprehensive income or notes to (consolidated) financial statements
IFRS			
Tax reconciliation	US GAAP: ASC 740-10-50-12 and -13; 17 CFR § 210.4-08	<ul style="list-style-type: none"> Reconciliation of the reported amount of income tax expense attributable to continuing operations for the year to the amount of income tax expense that would result from applying domestic federal statutory tax rates to pre-tax income from continuing operations (using either percentages or dollar amounts) Estimated amount and nature of each significant reconciling item. Reconciling items that are individually less than five percent of the expected tax expense may be aggregated. <p>If no individual reconciling item amounts to more than five percent of the expected tax expense and the total difference to be reconciled is less than five percent, no reconciliation needs to be provided.</p>	Notes to (consolidated) financial statements
IFRS: International Accounting Standards (IAS) 12.81(c), 84-86			
		<ul style="list-style-type: none"> Explanation of the relationship between tax expense (income) and accounting profit in either or both of the following forms: <ul style="list-style-type: none"> A numerical reconciliation between tax expense (income) and the product of accounting profit multiplied by the applicable tax rate(s), disclosing also the basis on which the applicable tax rate(s) is (are) computed A numerical reconciliation between the average effective tax rate and the applicable tax rate, disclosing also the basis on which the applicable tax rate is computed 	Notes to (consolidated) financial statements

Topic / type of disclosure	Relevant standards	Content of disclosure (only selected items)	Place of disclosure
Deferred taxes	US GAAP: ASC 740-10-50-2, -3, -6, -9; ASC 740-30-50-2; 17 CFR § 210.4-08	<ul style="list-style-type: none"> Significant components of income tax expense, especially: <ul style="list-style-type: none"> Current tax expense (or benefit) Deferred tax expense (or benefit) Components of the net deferred tax liability or asset recognized in an entity's statement of financial position: <ul style="list-style-type: none"> Total of all deferred tax liabilities Total of all deferred tax assets Total valuation allowance recognized for deferred tax assets Net change during the year in the total valuation allowance Amounts and expiration dates of operating loss and tax credit carryforwards for tax purposes Approximate tax effect of each type of temporary difference and carryforward that gives rise to a significant portion of deferred tax liabilities and deferred tax assets When a deferred tax liability is not recognized because of the exceptions to comprehensive recognition of deferred taxes: <ul style="list-style-type: none"> A description of the types of temporary differences for which a deferred tax liability has not been recognized and the types of events that would cause those temporary differences to become taxable The cumulative amount of each type of temporary difference The amount of the unrecognized deferred tax liability for temporary differences related to investments in foreign subsidiaries and foreign corporate joint ventures that are essentially permanent in duration if determination of that liability is practicable (or a statement that determination is not practicable) 	Notes to (consolidated) financial statements
	IFRS: IAS 12.79-82, 87	<ul style="list-style-type: none"> Major Components of tax expense (or income). These components may include (i.a.): <ul style="list-style-type: none"> Current tax expense (or income) The amount of deferred tax expense (or income) relating to the origination and reversal of temporary differences The amount of deferred tax expense (or income) relating to changes in tax rates or the imposition of new taxes Deferred tax expense arising from the write-down, or reversal of a previous write-down, of a deferred tax asset In respect of each type of temporary difference, unused tax losses, and unused tax credits: <ul style="list-style-type: none"> The amount of the deferred tax assets and liabilities recognized in the statement of financial position for each period presented The amount of the deferred tax income or expense recognized in profit or loss The amount of a deferred tax asset and the nature of the evidence supporting its recognition, when: <ul style="list-style-type: none"> The utilization of the deferred tax asset is dependent on future taxable profits in excess of the profits arising from the reversal of existing taxable temporary differences; and The entity has suffered a loss in either the current or preceding period in the tax jurisdiction to which the deferred tax asset relates The amount (and expiry date, if any) of deductible temporary differences, unused tax losses, and unused tax credits for which no deferred tax asset is recognized in the statement of financial position The aggregate amount of temporary differences associated with investments in subsidiaries, branches, and associates and interests in joint arrangements for which deferred tax liabilities have not been recognized (i.e., if the parent is able to control the timing of the reversal and it is probable that the temporary difference will not reverse in the foreseeable future) 	Notes to (consolidated) financial statements

Topic / type of disclosure	Relevant standards	Content of disclosure (only selected items)	Place of disclosure
Uncertain tax benefits	US GAAP: ASC 740-10-50-15A (codification of FIN 48)	<ul style="list-style-type: none"> • Tabular reconciliation of the total amounts of unrecognized tax benefits (UTBs) at the beginning and end of the period, including at a minimum: <ul style="list-style-type: none"> ◦ Gross amounts of the increases / decreases in UTBs as a result of tax positions taken during a prior period ◦ Gross amounts of the increases / decreases in UTBs as a result of tax positions taken during the current period ◦ Amounts of decreases in the unrecognized tax benefits relating to settlements with taxing authorities ◦ Reductions to UTBs as a result of a lapse of the applicable statute of limitations • The total amount of UTBs that, if recognized, would affect the effective tax rate • For positions for which it is reasonably possible that the total amounts of UTBs will significantly increase or decrease within 12 months of the reporting date: <ul style="list-style-type: none"> ◦ The nature of the uncertainty ◦ The nature of the event that could occur in the next 12 months that would cause the change ◦ An estimate of the range of the reasonably possible change or a statement that an estimate of the range cannot be made 	Notes to (consolidated) financial statements
	IFRS: IAS 12.88; IFRIC 23.A4-A5	<ul style="list-style-type: none"> • When there is uncertainty over income tax treatments, an entity shall determine whether to disclose: <ul style="list-style-type: none"> ◦ Judgments made in determining taxable profit (tax loss), tax bases, unused tax losses, unused tax credits, and tax rates; and ◦ Information about the assumptions and estimates made in determining taxable profit (tax loss), tax bases, unused tax losses, unused tax credits, and tax rates • If an entity concludes it is probable that a tax authority will accept an uncertain tax treatment, the entity shall determine whether to disclose the potential effect of the uncertainty as a tax-related contingency 	Notes to (consolidated) financial statements
Geographic segment disclosures	US GAAP: ASC 280-10-50-41 IFRS: IFRS 8.33	<p>Companies have to disclose several financial figures separately for each operating segment. The disaggregation into operating segments is based on the way management organizes segments internally to make operating decisions and assess performance (“management approach”). Financial information can therefore be segmented in several ways (e.g., by products and services, by geography, by legal entity, or by type of customer).</p> <p>If a company does not define its segments by geography, at least the following geographic information has to be disclosed (if practicable):</p> <ul style="list-style-type: none"> • Revenues from external customers from the country of domicile and foreign countries in total • Material revenue from one country individually • Basis for attributing revenues from external customers to individual entities • Long-lived assets (US GAAP) / non-current assets (IFRS) • Material assets in an individual foreign country individually <p>Besides, a geographic breakdown of tax expense and of pre-tax income is required for SEC-registered US firms by 17 CFR § 210.4-08 (as described in the first row of this table section).</p>	Notes to (consolidated) financial statements

Topic / type of disclosure	Relevant standards	Content of disclosure (only selected items)	Place of disclosure
List of subsidiaries	US GAAP: 17 CFR § 229.601(b)(21)	<ul style="list-style-type: none"> List of the subsidiaries of the registrant, containing: <ul style="list-style-type: none"> State or other jurisdiction of incorporation or organization Names under which such subsidiaries do business <p>Subsidiaries may be omitted if the unnamed subsidiaries, considered in the aggregate as a single subsidiary, would not constitute a significant subsidiary as of the end of the year covered by this report.</p>	Exhibit 21 to the 10-K filing
	IFRS: IFRS 12.10(a)(i); Art. 28 para. 2 (a) of the EU Accounting Directive (2013/34/EU)	<p>The IFRS only require disclosing information that enables users of its consolidated financial statements to understand the composition of the group.</p> <p>However, the EU Accounting Directive obliges EU firms to disclose (i.a.):</p> <ul style="list-style-type: none"> In relation to undertakings included in the consolidation (or excluded from a consolidation on the grounds of immateriality): <ul style="list-style-type: none"> The names and registered offices of those undertakings The proportion of the capital held in those undertakings The names and registered offices of associated undertakings included according to the equity method 	Notes to (consolidated) financial statements

B. Mandatory Public CbCR

Country / Region	Law / source of the rule	Content / items of disclosure	Medium / place of disclosure	Who is affected?	Entry into force
Canada	Extractive Sector Transparency Measures Act (ESTMA), S.C. 2014, c. 39, s. 376	<p>Reporting businesses have to report certain types of payments to all levels of government in Canada or abroad if these payments exceed Canadian Dollar (CAD) 100,000.</p> <p>Payments within the scope of the ESTMA are:</p> <ul style="list-style-type: none"> • Taxes, other than consumption or personal income taxes • Royalties • Fees and regulatory charges as well as considerations for licenses, permits or, concessions • Production entitlements • Bonuses, including signature, discovery, and production bonuses • Dividends • Infrastructure improvement payments <p>Payments shall be disclosed at project level, when possible. "Project" refers to operational activities that are governed by contract(s) and form the basis of payment liabilities with a government. Taxes can be reported on jurisdictional/country level.</p>	<p>Reports have to made available by entities on a publicly accessible website. The Government of Canada publishes a list of links to the reports on a public website:</p> <p>https://www.nrcan.gc.ca/our-natural-resources/mining-resources/extractive-sector-transparency-m/links-estma-reports/18198</p>	<p>Entities (i.e., firms) engaged in the commercial development of oil, gas, or minerals. The reporting obligation includes firms that control entities engaged in these activities.</p> <p>An entity is required to report if it meets one of the following two criteria:</p> <ul style="list-style-type: none"> • The entity is listed on a stock exchange in Canada • Non-listed entities are within the scope if they meet two of the following size-related criteria in one of the two most recent financial years: <ul style="list-style-type: none"> ○ At least CAD 20 million in total assets ○ At least CAD 40 million in revenues ○ At least 250 employees on average 	<p>The ESTMA was enacted in December 2014 and came into force on June 1, 2015. Applicable for fiscal years starting on or after June 1, 2015.</p>

Country / Region	Law / source of the rule	Content / items of disclosure	Medium / place of disclosure	Who is affected?	Entry into force
EU and European Economic Area (EEA) member states	Chapter 10 of the EU Accounting Directive (2013/34/EU), Art. 1 of the EU Transparency Directive (2013/50/EU)	<p>Disclosures to be made on a per-country basis:</p> <ul style="list-style-type: none"> • Total amount of payments made to each government • Amount per type of payment made to each government, separately for <ul style="list-style-type: none"> ◦ Production entitlements ◦ Taxes levied on the income, production, or profits of companies ◦ Royalties ◦ Dividends ◦ Signature, discovery, and production bonuses ◦ License fees, rental fees, entry fees, and other considerations for licenses and/or concessions ◦ Payments for infrastructure improvements • Where those payments have been attributed to a specific project, the total amount per type of payment made for each such project and the total amount of payments for each such project <p>The disclosures pertain to payments made to any governments resulting from extractive operations (i.e., exploration, prospecting, discovery, development, and extraction of minerals, oil, natural gas deposits, or other materials) and/or operations relating to the logging of primary forests. Payments below EUR 100,000 within a financial year are exempt from disclosure.</p>	<p>Reports have to be filed with and published in the national commercial register. Most affected firms also publish the report on their website.</p>	<ul style="list-style-type: none"> • Large EU/EEA undertakings and all EU/EEA public-interest entities active in the extractive industry or the logging of primary forests • Undertakings active in the extractive or logging of primary forest industries which are listed at an EU/EEA stock exchange <p>Parent undertakings which are required to prepare consolidated financial statements have to disclose a consolidated report on payments (comprising the parent entity and all subsidiaries under its control).</p> <p>Large undertakings according to the EU Accounting Directive are defined as undertakings which on their balance sheet dates exceed at least two of the three following criteria:</p> <ul style="list-style-type: none"> • Balance sheet total of EUR 20 million • Net turnover of EUR 40 million • Average number of employees during the financial year of 250 	Fiscal years starting on or after January 1, 2016 (earlier application in a few member states).

Country / Region	Law / source of the rule	Content / items of disclosure	Medium / place of disclosure	Who is affected?	Entry into force
United States	Sec. 1504 of the Dodd-Frank Wall Street Reform and Consumer Protection Act; Sec. 13(q) of the Securities Exchange Act (15 U.S.C. § 78m(q))	<p>Disclosures to be made both per government/country and per project:</p> <ul style="list-style-type: none"> • Total amounts of payments made to any government, broken down by category: <ul style="list-style-type: none"> ◦ Taxes ◦ Royalties ◦ Fees (including license fees) ◦ Production entitlements ◦ Bonuses ◦ Other material benefits • Currency used to make the payments • Financial period in which the payments were made • Business segment that made the payments <p>The disclosures comprise any payment by the listed company (or a subsidiary or entity under its control) to any government for the purpose of the commercial development of oil, natural gas, or minerals. The SEC is allowed to set a de minimis rule so that payments under a certain threshold are exempt from disclosure.</p>	Disclosures have to be filed with the SEC, publicly available through EDGAR.	SEC-registered companies engaging in the commercial development of oil, natural gas, or minerals	The Dodd-Frank Act was enacted on July 21, 2010. Sec. 1504 directed the SEC to issue final rules that require the disclosure. The SEC adopted such rules in 2012, but they were vacated by court decision in 2013. In 2016, the SEC adopted a modified version, which was revoked by the Congress via a joint resolution of disapproval in 2017. As of December 2019, the SEC has proposed a third version of the rule (which is currently in the comment period).
EU and EEA member states	Art. 89 of the EU CRD IV (2013/36/EU)	<p>Disclosures to be made on a per-country basis:</p> <ul style="list-style-type: none"> • Turnover • Number of employees on a full-time equivalent basis • Profit or loss before tax • Tax on profit or loss • Public subsidies received • List of all the subsidiaries and permanent establishments maintained in the respective country, containing <ul style="list-style-type: none"> ◦ Name(s) ◦ Nature of activities ◦ Geographical location 	The report has to be audited and published as an annex to the (consolidated) financial statements.	EU financial institutions	Fiscal years starting on or after January 1, 2014 (limited disclosures already for the preceding year). Later implementation dates in the EEA countries Iceland, Liechtenstein, and Norway.

Country / Region	Law / source of the rule	Content / items of disclosure	Medium / place of disclosure	Who is affected?	Entry into force
EU member states	Proposal for a General Public CbCR. The information is based on the compromise proposal of the Presidency of the Council of the EU as of November 13, 2019 (14038/19) and on the resolution of the European Parliament of March 27, 2019 (P8_TA- PROV(2019)0309).	<p>The compromise proposal of the Presidency requires the following disclosures:</p> <ul style="list-style-type: none"> • The name of the ultimate parent undertaking or the standalone undertaking • Financial year concerned • Currency used • The following items on a per-country basis for each EU member state and each tax jurisdiction contained in the EU list of non-cooperative jurisdictions and on an aggregate basis for all other jurisdictions: <ul style="list-style-type: none"> ◦ Brief description of the nature of the activities ◦ Number of employees ◦ Revenues ◦ Profit or loss before income tax ◦ Income tax accrued during the relevant financial year ◦ Income tax paid on cash basis ◦ Accumulated earnings at the end of the relevant financial year <p>The European Parliament demands a per-country disclosure for all jurisdictions worldwide and proposes several additional items:</p> <ul style="list-style-type: none"> • List of all subsidiaries, a brief description of the nature of their activities and their respective geographical location • Fixed assets other than cash or cash equivalents • Distinction between the revenues made with related parties and with unrelated parties • Stated capital • Details of public subsidies received and any donations made to politicians, political organizations, or political foundations • Whether undertakings, subsidiaries or branches benefit from preferential tax treatment, from a patent box, or equivalent regimes 	<p>Reports have to be filed with and published in the national commercial register. In addition, the report shall be published on the website of the reporting entity.</p> <p>Instead of the filing with the national commercial register, the European Parliament proposes the publication according to a common template in a central registry managed by the European Commission.</p>	<ul style="list-style-type: none"> • Ultimate parent undertakings or standalone undertakings domiciled in the EU which on their balance sheet date exceeded for each of the last two consecutive financial years a total (consolidated) revenue of EUR 750 million • Medium-sized and large EU subsidiaries and branches controlled by an ultimate parent undertaking domiciled outside the EU which on its balance sheet date exceeded for each of the last two consecutive financial years a total consolidated revenue of EUR 750 million (even in this case, the disclosures shall comprise the whole group) <p>The scope of affected undertakings proposed by the European Parliament is slightly more comprehensive (e.g., no restriction to medium-sized and large EU subsidiaries; exceeding of the revenue threshold in the immediately preceding financial year sufficient).</p>	Open / implementation still under debate.

C. Mandatory Tax Strategy Disclosure

Country / Region	Law / source of the rule	Content / items of disclosure	Medium / place of disclosure	Who is affected?	Entry into force
United Kingdom	Schedule 19 of the Finance Act 2016 (s. 24), Sec. 161	<p>The tax strategy report must contain:</p> <ul style="list-style-type: none"> • The approach to risk management and governance arrangements in relation to UK taxation • The attitude towards tax planning (so far as affecting UK taxation) • The level of risk in relation to UK taxation that the business is prepared to accept • The approach of the business towards its dealings with Her Majesty's Revenues and Customs (HMRC) • Details of the paragraph of the legislation the report complies with <p>The group tax strategy may include:</p> <ul style="list-style-type: none"> • Any other information relating to taxation (whether UK taxation or otherwise) 	<p>The tax strategy report must be published on an annual basis on the internet and be available free of charge. The report may be published as a separate document or as a self-contained part of a wider document.</p>	<ul style="list-style-type: none"> • UK groups, sub-groups, companies, or partnerships that exceeded at least one of the following thresholds in the previous financial year: <ul style="list-style-type: none"> ◦ A turnover of Pound Sterling (GBP) 200 million ◦ A balance sheet total of GBP 2 billion • UK companies or groups that are part of an MNE group that meets the OECD's CbCR framework threshold of global turnover over EUR 750 million 	<p>Effective for financial years starting after September 15, 2016.</p>
				<p>A company or sub-group only has to publish its own tax strategy if it's not covered by a published strategy at a higher level.</p>	

D. Voluntary Disclosure Frameworks

Country / Region	Law / source of the rule	Content / items of disclosure	Medium / place of disclosure	Who is affected?	Entry into force
Australia	Voluntary tax transparency code (TTC) (part of the 2016-17 Federal Budget)	<p>The Tax Transparency Code (TTC) is a set of principles and minimum standards to guide medium and large businesses on public disclosure of tax information. Information disclosed under the TTC is divided between Part A and Part B content.</p> <p>Part A contains:</p> <ul style="list-style-type: none"> • A reconciliation of accounting profit to tax expense and to income tax paid or income tax payable • Identification of material temporary and non-temporary differences • Accounting effective company tax rates for Australian and global operations <p>Part B contains:</p> <ul style="list-style-type: none"> • Approach to tax strategy and governance • Tax contribution summary for corporate taxes paid • Information about international related party dealings 	<p>Businesses can elect to satisfy the minimum standards of the TTC by publishing the corresponding information</p> <ul style="list-style-type: none"> • In their general-purpose financial statements, • In a Taxes Paid Report, or • In another document <p>Businesses can notify the ATO once they have made their TTC report publicly available on their website and provide the ATO with the current URL link to the published report.</p> <p>The ATO facilitates the centralized hosting of the published TTC reports provided by the businesses that adopt the TTC. These reports are hosted at https://data.gov.au/dataset/ds-dga-f71709a8-2eeb-4592-ad1f-443f7f520186/details. The ATO does not review or provide any assurance on the accuracy of the information contained in these reports.</p>	<p>Companies (including entities treated as companies for Australian tax purposes) that are medium or large businesses are encouraged to adopt the TTC. This includes Australian-headquartered businesses and foreign multinationals that have operations in Australia.</p> <p>It is recommended that medium businesses adopt Part A of the TTC and large businesses adopt both Part A and Part B of the TTC.</p> <p>Medium and large businesses are defined by the following thresholds:</p> <ul style="list-style-type: none"> • Medium businesses are businesses with aggregated Australian turnover of at least Australian Dollar (AUD) 100 million but less than AUD 500 million • Large businesses are businesses with aggregated Australian turnover of AUD 500 million or more 	<p>The Board of Taxation recommended the TTC be adopted for financial years ending after the release of the Board's final report on 3 May 2016.</p>

Country / Region	Law / source of the rule	Content / items of disclosure	Medium / place of disclosure	Who is affected?	Entry into force
International	GRI 207: TAX (2019)	<p>Management approach disclosures:</p> <ul style="list-style-type: none"> • Approach to tax (207-1) <ul style="list-style-type: none"> ◦ Tax strategy of the company ◦ Governance body that formally reviews and approves the tax strategy ◦ Approach to regulatory compliance ◦ Link between the approach to tax and the business and sustainable development strategies • Tax governance, control, and risk management (207-2) <ul style="list-style-type: none"> ◦ Description of the tax governance and control framework ◦ Description of the mechanisms for reporting concerns about unethical or unlawful behavior and the integrity in relation to tax ◦ Description of the assurance process for disclosures on tax and reference to the assurance report • Stakeholder engagement and management of concerns w.r.t. to tax disclosure (207-3) <ul style="list-style-type: none"> ◦ Approach to engagement with tax authorities ◦ Approach to public policy advocacy on tax ◦ Processes for collecting and considering the views and concerns of stakeholders <p>CbCR disclosures (207-4):</p> <ul style="list-style-type: none"> • Mandatory disclosures for each tax jurisdictions where the entities included in the consolidated financial statements are resident for tax purposes: <ul style="list-style-type: none"> ◦ Names of the resident entities ◦ Primary activities of the organization ◦ Number of employees (and the basis of calculation of this number) ◦ Revenues from third-party sales 	<p>The GRI Standards are designed to be used by organizations to report about their impacts on the economy, the environment, and society. A report in accordance with the GRI Standards can be produced as a stand-alone sustainability report or can reference information disclosed in a variety of locations and formats.</p>	<p>In general, the GRI Standards are applicable for every organization preparing a sustainability report. There are two basic approaches for applying the Standards:</p> <ul style="list-style-type: none"> • The GRI Standards can be used as a set to prepare a sustainability report that is in accordance with the Standards • Selected GRI Standards, or parts of their content, can also be used to report specific information without preparing a report in accordance with the Standards 	<p>The Standard is effective for reports or other materials published on or after January 1, 2021. However, earlier adoption is encouraged.</p>

Country / Region	Law / source of the rule	Content / items of disclosure	Medium / place of disclosure	Who is affected?	Entry into force
		<ul style="list-style-type: none"> ○ Revenues from intra-group transactions with other jurisdictions ○ Profit/loss before tax ○ Tangible assets other than cash and cash equivalents ○ Corporate income tax paid on a cash basis ○ Corporate income tax accrued on profit/loss (without deferred taxes) ○ Reasons for the difference between corporate income tax accrued on profit/loss and the tax due if the statutory tax rate is applied to profit/loss before tax • Reconciliation of the sums of reported third-party revenues, profit/loss, tangible assets, and corporate income tax paid with the data stated in the consolidated financial statements 			

II. Public Disclosure by Tax Authorities – Tax Return Disclosure

Country / Region	Law / source of the rule	Content / items of disclosure	Medium / place of disclosure	Who is affected?	Entry into force
Australia	Sec. 3C-3E of the Taxation Administration Act 1953	<ul style="list-style-type: none"> Company name and business identification number (ABN) Total income Taxable income Income tax payable 	<p>Disclosure on the website of the ATO:</p> <p>https://data.gov.au/dataset/ds-dga-c2524c87-cea4-4636-acac-599a82048a26/details</p>	<ul style="list-style-type: none"> Australian public and foreign-owned corporate tax entities with total income of AUD 100 million or more Australian-owned resident private companies with total income of AUD 200 million or more Entities that have an amount of petroleum resource rent tax (PRRT) payable 	Effective as of tax year 2013/2014.
Denmark	Sec. 17 of the Skatteforvaltningsloven (SFL)	<ul style="list-style-type: none"> Identity of the taxpayer Taxable income Utilized losses carried forward Amount of payable taxes 	Online database by the tax administration.	<ul style="list-style-type: none"> Entities that are liable to corporate tax in Denmark 	Effective as of tax year 2011.
Finland	Sec. 5 of the Act on the Public Disclosure and Confidentiality of Tax Information No 1346/1999	<ul style="list-style-type: none"> Name of the corporation Municipality of domicile Corporate code Taxable income and property Total amount of taxes imposed Total amount of withholding tax Amount to be levied or refunded in the course of tax collection 	Information can be obtained at customer terminals in the local tax offices. The publication of the data comes along with considerable media coverage.	<ul style="list-style-type: none"> Entities that are liable to corporate tax in Finland 	Effective as of January 1, 2000.
Japan	(abolished)	<ul style="list-style-type: none"> Corporate name Taxable income Tax office to which the tax was remitted Name of company's president Beginning and ending day of the accounting year 	Information was posted publicly at the tax office within three months after a company had submitted its tax return, and was public for at least one month. This information was often collected and centrally published by private publishing companies.	<ul style="list-style-type: none"> Corporations whose taxable income exceeded the threshold of Yen (JPY) 40 million (about 69,000-84,000 companies) 	Introduced in 1950, abolished in 2005 (i.e., the last disclosure occurred in 2006 for the tax year 2005).

Country	Law / source of the rule	Content / items of disclosure	Medium / place of disclosure	Who is affected?	Entry into force
Norway	Sec. 8-8 of the Ligningsloven	<ul style="list-style-type: none"> Name of the corporation Organization number Postcode and postal town Municipality Net income Net wealth Tax 	Tax lists are published on the website of the Norwegian tax authority (skatteetaten.no). Users have to create an account to get access to the lists.	<ul style="list-style-type: none"> Corporations who received a tax assessment notice 	Public tax return disclosures in Norway date back to the middle of the 19 th century.
Pakistan	Sec. 181B and Sec. 216 (5) of the Income Tax Ordinance 2001	<p>Disclosures in the taxpayer's directory:</p> <ul style="list-style-type: none"> Name of the company Identification number Amount of income tax paid <p>In addition, under the Taxpayer Privileges and Honor Card Program (TPHC), the Federal Board of Revenue announces annually the top 100 taxpayers of four categories, including corporations and partnerships. Besides, these top taxpayers receive material benefits and privileges.</p>	<p>Website of the Federal Board of Revenue Pakistan:</p> <p>https://fbr.gov.pk/Categ/income-tax-directory/742</p>	<ul style="list-style-type: none"> All corporations domiciled in Pakistan All partnerships ("associations of persons") domiciled in Pakistan 	Effective as of tax year 2012/2013.
Poland	Art. 27b of the Corporate Income Tax Act	<ul style="list-style-type: none"> Company name Taxpayer identification number (NIP) Revenues Tax deductible costs Income or incurred loss Tax base Tax due (Effective tax rate) 	Publication on the Ministry's website (in the Public Information Bulletin)	<ul style="list-style-type: none"> All "tax capital groups" (regardless of the amount of revenues), which are formally recognized groups of wholly or majority-owned companies consolidating their taxes under a single Polish entity Corporate taxpayers other than tax capital groups, whose income in the tax year exceeds the amount of EUR 50 million 	Effective as of January 1, 2018, disclosures for tax years 2012 and onwards.
Turkey	Art. 5 III of the Vergi Usul Kanunu (VUK)	<ul style="list-style-type: none"> Name of the corporation Activity type Amount of tax paid Location Affiliated tax office 	<p>Website of the Turkish Revenue Administration:</p> <p>https://www.gib.gov.tr/sites/default/files/fileadmin/user_upload/VI/2018_KurumlarVergisi.htm</p>	<ul style="list-style-type: none"> The top 100 highest-paying taxpayers (regarding corporate income tax) Taxpayers who do not want their names to be revealed are not included in the list 	No information.

III. Private Disclosures to Tax Authorities

A. Private CbCR

Country / Region	Law / source of the rule	Content / items of disclosure	Medium of disclosure and exchange of information	Who is affected?	Entry into force
More than 80 countries worldwide	OECD BEPS Action Plan – Action Point 13; Council Directive (EU) 2016/881	<p>Disclosures to be made on a per-country basis:</p> <ul style="list-style-type: none"> • Revenues, broken down into related party and unrelated party • Profit (loss) before income tax • Income tax paid (on cash basis) • Income tax accrued – current year • Stated capital • Accumulated earnings • Number of employees • Tangible assets other than cash and cash equivalents • List of all the constituent entities of the MNE group included in each aggregation per tax jurisdiction, containing <ul style="list-style-type: none"> ○ Name(s) ○ Main activity(ies) <p>In combination with the “local file” and the “master file”, the CbCR is part of the OECD’s three-tiered approach to transfer pricing documentation.</p>	<p>Affected companies disclose the reports to the national tax authorities. The reports are exchanged between the tax authorities of the affected countries based on the Multilateral Competent Authority Agreement (CbC MCAA) or, alternatively, based on bilateral agreements (i.a., with the US). The OECD has developed a standardized XML format for the filing and exchange of the reports.</p>	<ul style="list-style-type: none"> • The ultimate parent entity of an MNE group that is resident for tax purposes in a participating country if the consolidated group revenue in the preceding financial year was equal to or exceeded EUR 750 million (or an equivalent in local currency) • A resident constituent entity which is not the ultimate parent entity of an MNE group which exceeds the above-mentioned revenue threshold if the ultimate parent entity does not have to file a report in its jurisdiction of residence or if this jurisdiction does not take part in the exchange of the reports 	<p>A first wave of countries (including the EU member states) adopted the rules for fiscal years starting on or after January 1, 2016. Several countries followed later on.</p>

B. Disclosure of Tax Planning Arrangements

Country	Law / source of the rule	What has to be disclosed? Definition of the reportable transactions	Medium of disclosure and exchange of information	Who has to disclose?	Entry into force / in effect for
Canada	Disclosure of reportable transactions (Sec. 237.3 of the Canadian Income Tax Act)	<p>A reportable transaction is an "avoidance transaction", as defined for purposes of Canada's general anti-avoidance rule, that is entered into by a taxpayer and meets at least two of the following three criteria:</p> <ul style="list-style-type: none"> • The promoter or advisor for the transaction is entitled to a fee that is based on <ul style="list-style-type: none"> ◦ The amount of the tax benefit ◦ Getting the tax benefit ◦ The number of people participating, or who have been provided access to advice from the promoter or advisor about the tax consequences • The promoter or advisor for the transaction obtains "confidential protection" (i.e., any arrangement that prohibits him from disclosing the details or structure of the transaction to any person) • The taxpayer, the person who entered into the transaction on the taxpayer's behalf, or the promoter or advisor have or had "contractual protection" (i.e., any form of protection against failure of the transaction) 	<p>An information return (Form RC312) has to be filed with the Canadian Revenue Agency (CRA) on or before June 30 of the calendar year following the calendar year in which the transaction first became a reportable transaction.</p>	<ul style="list-style-type: none"> • Every taxpayer for whom a tax benefit results (or would result) from the reportable transaction • Every person who has entered into a reportable transaction for the benefit of another person • Every advisor or promoter in respect of the reportable transaction who is or was entitled to a fee in respect of this transaction • Every person who is not dealing at arm's length with an advisor or promoter in respect of the reportable transaction and who is or was entitled to a fee in respect of this transaction 	Reportable transactions entered into after December 31, 2010.

Country	Law / source of the rule	What has to be disclosed? Definition of the reportable transactions	Medium of disclosure and exchange of information	Who has to disclose?	Entry into force / in effect for
EU member states	DAC 6 (Council Directive (EU) 2018/822 of 25 May 2018)	<p>Disclosure of reportable cross-border arrangements, i.e., arrangements which</p> <ul style="list-style-type: none"> Concern either more than one member state or a member state and a third country ("cross-border") and Contain at least one of certain "hallmarks" <p>A hallmark is a characteristic or feature of a cross-border arrangement that presents an indication of a potential risk of tax avoidance. Annex IV of the Directive contains a detailed list of hallmarks, including (i.a.):</p> <ul style="list-style-type: none"> The use of substantially standardized structures Deductible cross-border payments to associated companies where the recipient benefits from certain tax advantages Transfer pricing arrangements involving the use of unilateral safe harbor rules Arrangements designed to circumvent automatic exchange of information and beneficial ownership <p>Certain hallmarks are subject to a "main benefit test", which is satisfied if the main benefit (or one of the main benefits) a person may reasonably expect to derive from an arrangement is obtaining a tax advantage.</p>	<p>The disclosure has to be made to the competent tax authority of the member state within 30 days of certain trigger events. If more than one member state is concerned, the Directive contains an unambiguous provision to which member state the information has to be reported.</p> <p>The information will be automatically exchanged each quarter by the competent authorities of each member state.</p>	<ul style="list-style-type: none"> Primarily the intermediaries, i.e., any person that designs, markets, organizes, or makes available for implementation or manages the implementation of a reportable cross-border arrangement, or that provides aid, assistance, or advice with regard to the arrangement In the following cases the taxpayer has to disclose: <ul style="list-style-type: none"> The intermediary has no EU nexus The intermediary cannot make the disclosure due to legal professional privilege The taxpayer has developed the arrangement in-house 	<p>The Directive applies as of July 1, 2020. However, reportable arrangements the first step of which was implemented between June 25, 2018, and July 1, 2020, have to be disclosed by August 31, 2020.</p>

Country	Law / source of the rule	What has to be disclosed? Definition of the reportable transactions	Medium of disclosure and exchange of information	Who has to disclose?	Entry into force / in effect for
Ireland	Mandatory disclosure regime (Sec. 817D-817R of the Taxes Consolidation Act 1997)	<p>A disclosable transaction is any transaction, or proposal for a transaction, that meets all of the following criteria:</p> <ul style="list-style-type: none"> • It may enable a person to obtain a tax advantage • The tax advantage is, or might be expected to be, one of the main benefits of the transaction • It matches any one of the specified descriptions (i.e., classes of transaction) set out in the legislation 	Disclosures have to be made to the central Mandatory Disclosure Unit within five working days (30 working days for “in-house” schemes), using specific forms (Forms MD1-MD7).	<ul style="list-style-type: none"> • Primarily the promoters of the schemes (e.g., accountants, solicitors, banks and financial institutions, along with small firms of specialist promoters) • However, in the following cases the client/user has to disclose: <ul style="list-style-type: none"> ◦ Where the promoter is outside Ireland ◦ Where there is no promoter and the scheme is specific to a certain group or for their own use (“in-house” scheme) ◦ Where the promoter cannot make a disclosure due to legal professional privilege 	Introduced as of January 2011, major amendments to the rule in 2015.
Portugal	Decree-Law No 29/2008 of February 25, 2008	<p>Obligation to report operations and transactions whose sole or principal objective is to obtain tax benefits (tax planning structures). The tax planning schemes or dealings which fall under this regime are those which involve</p> <ul style="list-style-type: none"> • An entity subject to a more favorable tax regime • An entity totally or partially exempt from taxation • Financial or insurance operations that may lead to a recharacterization of income or to a change of beneficiary • The use of tax losses • Promoters whose liability is excluded or limited, irrespective of whether the situation falls under one of the previous cases 	<p>Disclosure to the Portuguese tax authorities via official forms within 20 days following the end of the month in which the scheme or action has been conceived, proposed, or adopted for the first time (promoter) or until the end of the month following its adoption (user), respectively. The tax authorities organize a database which will include tax planning schemes. This database is made available to tax inspectors in case of tax audits.</p>	<ul style="list-style-type: none"> • Primarily the promoters of reportable operations and transactions (if resident in Portugal) • Users of reportable operations and transactions (if the promoter is a non-resident entity or the scheme has not been proposed by a promoter) 	Effective as of 15 May 2008. However, the regime is supposed to be abolished in the course of the national implementation of the EU DAC 6 (see above).

Country	Law / source of the rule	What has to be disclosed? Definition of the reportable transactions	Medium of disclosure and exchange of information	Who has to disclose?	Entry into force / in effect for
South Africa	Reportable Arrangements Legislation (§ 34-39 of the Tax Administration Act of 2011)	<p>Disclosure of reportable arrangements. These are arrangements which are either contained in a specific list published by the Commissioner or where a tax benefit is or will be derived or is assumed to be derived by any participant and which additionally</p> <ul style="list-style-type: none"> • Provide for interest, fees, etc. that are partly or wholly dependent on the assumptions relating to the tax treatment of that arrangement; • Have characteristics which are substantially similar to the indicators of a lack of commercial substance in terms of the general anti-avoidance rule; • Give rise to an amount that is or will be disclosed by any participant as <ul style="list-style-type: none"> ◦ A deduction for purposes of the Income Tax Act but not as an expense for purposes of financial reporting standards or ◦ Revenue for purposes of financial reporting standards but not as gross income for purposes of the Income Tax Act • Do not result in a reasonable expectation of a pre-tax profit for any participant; or • Result in a reasonable expectation of a pre-tax profit for any participant that is less than the value of that tax benefit to that participant if both are discounted to a present value <p>Certain arrangements are explicitly excluded from the disclosure obligation.</p>	<p>The arrangement must be disclosed to the South African Revenue Service (SARS) within 45 business days after an amount is first received by or has accrued to a participant or is first paid or actually incurred by a participant in terms of the arrangement. After receipt of the information, the SARS issues a reportable arrangement reference number to each participant for administrative purposes.</p>	<ul style="list-style-type: none"> • Primarily the promoter of the reportable arrangement • All other participants of the reportable transaction, if <ul style="list-style-type: none"> ◦ There is no promoter in relation to the arrangement, or ◦ The promoter is not a resident <p>However, a participant need not disclose the information if the participant obtains a written statement that the promoter or any other participant has already made the disclosure</p>	<p>The initial version of the rule was enacted as of 2005. Major reforms have occurred in 2008 and 2011.</p>
UK	Disclosure of Tax Avoidance Schemes (DOTAS) (Part 7 of the Finance Act 2004)	<p>Disclosure of “notifiable arrangements” and proposals of such arrangements. A scheme qualifies as a notifiable arrangement if</p> <ul style="list-style-type: none"> • It will, or might be expected to, enable any person to obtain a tax advantage, That tax advantage is, or might be expected to be, the main benefit or one of the main benefits of the arrangement, and 	<p>Notifiable arrangements and proposals must be disclosed to the HMRC using Forms AAG1, AAG2 or AAG3. Disclosure has to be made within five days of certain trigger events (or within 30 days of the scheme being implemented if there is no promoter).</p>	<ul style="list-style-type: none"> • Primarily the promoters of notifiable arrangements • In the following cases the users of notifiable arrangements have to disclose: <ul style="list-style-type: none"> ◦ The promoter is based outside the UK ◦ The promoter is a lawyer and legal 	<p>Applies from August 1, 2004, to proposals notifiable on or after March 18, 2004, whenever implemented and arrangements entered into on or after April 23, 2003.</p>

Country	Law / source of the rule	What has to be disclosed? Definition of the reportable transactions	Medium of disclosure and exchange of information	Who has to disclose?	Entry into force / in effect for
		<ul style="list-style-type: none"> The scheme falls within one of a number of descriptions contained in the regulations (so-called “hallmarks”) <p>The current regulations comprise schemes relating to:</p> <ul style="list-style-type: none"> Financial products Standardized tax products Loss schemes Certain plant or machinery leasing arrangements Certain pension arrangements 		<ul style="list-style-type: none"> professional privilege prevents him or her from providing all or part of the prescribed information There is no promoter, such as when a person designs and implements their own scheme 	
US	Reportable Transaction Disclosure (26 CFR § 1.6011-4; 26 CFR § 301.6112-1; 26 U.S. Code § 6111)	<ul style="list-style-type: none"> Disclosure of the participation in a “reportable transaction”, which includes <ul style="list-style-type: none"> Listed transactions (i.e., contained in a list of tax avoidance transaction determined by the IRS) Confidential transactions (i.e., offered to a taxpayer under conditions of confidentiality and for a fee) Transactions with contractual protection (i.e., the taxpayer has the right to a refund of fees if intended tax consequences are not sustained) Loss transactions (i.e., any transaction resulting in the taxpayer claiming a certain loss) Transactions of interest (as identified by the IRS) 	<p>Taxpayers must attach Form 8886 to the respective tax return for each tax year in which the business participated in a reportable transaction. A copy of the disclosure statement must be sent to the Office of Tax Shelter Analysis (OTSA) at the same time that any disclosure statement is first filed by the taxpayer.</p> <p>Material advisors must file Form 8918 with the OTSA by the last day of the month that follows the end of the calendar quarter in which the advisor became a material advisor with respect to the reportable transaction or in which circumstances occur to require an amended disclosure statement. Besides, material advisors must prepare and maintain a list for each (type of) reportable transaction and furnish such list to the IRS upon request.</p>	<ul style="list-style-type: none"> Taxpayers participating in reportable transactions Material advisors with respect to any reportable transaction (i.e., persons who provide any material aid, assistance, or advice with respect to organizing, managing, promoting, selling, implementing, insuring, or carrying out any reportable transaction, and who derive a certain amount of gross income for such aid, assistance, or advice) 	The initial version of the rule was applicable to transactions entered into after February 28, 2003. The categories of reportable transactions have been amended as of August 3, 2007.

C. Supplementary Reconciliation Provided to Tax Authorities

Country / Region	Law / source of the rule	Content / items of disclosure	Medium of disclosure	Who is affected?	Entry into force
United States	Schedule M-3: Net Income (Loss) Reconciliation (final version issued by the Treasury and the IRS as of July 7, 2004)	<p>Part I:</p> <ul style="list-style-type: none"> Certain questions about the firm's financial statements Reconciliation of financial statement net income (loss) for the firm (or consolidated financial statement group, if applicable) to net income (loss) of includable corporations for US income tax purposes <p>Part II and III:</p> <ul style="list-style-type: none"> Reconciliation of the net income (loss) of includable corporations to US taxable income Categorization of every book-tax difference item (regardless of size) according to permanent and/or temporary (timing) components 	<p>Schedule M-3 has to be filed with the IRS as a part of the annual US corporate income tax return (Form 1120), US income tax return for an S corporation (Form 1120-S), or US return of partnership income (Form 1065).</p>	<ul style="list-style-type: none"> US corporations or groups of corporations who are required to file a US corporate income tax return (Form 1120) or a US income tax return for an S corporation (Form 1120-S) and whose total assets at the end of the tax year are equal to or exceed USD 10 million US partnerships who are required to file a US return of partnership income (Form 1065) if any of the following applies: <ul style="list-style-type: none"> Total assets at the end of the tax year equal to or exceeding USD 10 million Total receipts for the tax year equal to or exceeding USD 35 million An entity that owns at least 50% of the partnership is required to file Schedule M-3 itself 	<p>Schedule M-3 is effective for tax years ending on or after December 31, 2004 (for corporations) / tax years ending on or after December 31, 2006 (for S corporations and partnerships).</p>

Country / Region	Law / source of the rule	Content / items of disclosure	Medium of disclosure	Who is affected?	Entry into force
United States	Schedule UTP: Uncertain tax positions (26 CFR § 1.6012-2(a)(4); IRS Announcement 2010-75, I.R.B. 2010-41)	<p>Disclosure of income tax positions for which the two following conditions are satisfied:</p> <ul style="list-style-type: none"> The corporation has taken a tax position on its US federal income tax return for the current tax year or for a prior tax year Either the corporation or a related party has recorded a reserve with respect to that tax position for US federal income tax in audited financial statements, or the corporation or related party did not record a reserve for that tax position because the corporation expects to litigate the position <p>The following information has to be reported for each relevant tax position for the current tax year and for prior tax years:</p> <ul style="list-style-type: none"> Primary Internal Revenue Code (IRC) sections and subsections relating to the tax position Indication whether the tax position creates temporary or permanent book-tax differences (or both) Identification number of a pass-through entity involved in the tax position Indication whether the tax position qualifies as a major position (i.e., if its relative size is at least 10% of all positions) Ranking of the tax position according to its size (relative to the other positions) Concise description of the position 	<p>The disclosure is made using IRS Schedule UTP (Uncertain Tax Position Statement), which is filed as an attachment to the corporate income tax return, i.e., Form 1120 or Form 1120-F.</p>	<p>US corporations required to file a US corporate income tax return (Form 1120) and foreign corporations required to file a US income tax return of a foreign corporation (Form 1120-F) if all of the following criteria are fulfilled:</p> <ul style="list-style-type: none"> The corporation has assets that equal or exceed USD 10 million The corporation or a related party issued audited financial statements reporting all or a portion of the corporation's operations for all or a portion of the corporation's tax year The corporation has one or more tax positions that must be reported on Schedule UTP <p>The relevant asset threshold was phased in over a five-year period (USD 100 million for tax years 2010-2011, USD 50 million for 2012-2013 and USD 10 million for 2014 and all subsequent years).</p>	Effective for tax years beginning on or after January 1, 2010.

Notes: This table provides a detailed overview of selected tax-related disclosure rules and frameworks applicable (or under discussion) in several countries around the world. The information presented is compiled from the respective legal sources and standards indicated in the table, from additional administrative instructions of the respective tax authorities and standard setters, from the national reports on tax transparency for 29 countries contained in Başaran Yavaşlar and Hey (2019), from the institutional descriptions of empirical studies examining the respective settings, and from additional complementary sources. The information represents the status as of August 2020.

Appendix 2: Structured Overview of the Empirical Literature on Tax Transparency

Panel A: Studies on determinants – generic firm attributes and characteristics (Section 2.4.1.1)

References	Disclosure type	Determinants
Akamah et al. (2018)	Segment reporting	– Size – Industry
Ayers et al. (2015)	Deferred tax & BTB disclosures	– Size – Institutional ownership – Analyst coverage – Industry
Balakrishnan et al. (2019)	Voluntary disclosures in earnings announcements & conference calls	– Analyst coverage
Belnap (2019a)	Tax strategy disclosures	– Size
Bilicka et al. (2020)	Tax strategy disclosures	– Industry
N. Chen et al. (2019)	Voluntary disclosures in earnings announcements & conference calls	– Size – Institutional ownership – Analyst coverage
Dyrend et al. (2020)	Subsidiary list	– Size – Analyst coverage
Ehinger et al. (2020)	Voluntary disclosures in earnings announcements & conference calls	– Size – Analyst coverage
Evers et al. (2014)	Deferred tax & BTB disclosures	– Size
Gleason & Mills (2002)	UTB disclosures (FIN 48)	– Industry
Hardeck et al. (forthcoming)	CSR reports	– Size
Krapat et al. (2016)	Subsidiary list	– Size
Mauler (2019)	Tax disclosures in financial statements in general	– Analyst coverage
L. A. Robinson & Schmidt (2013)	UTB disclosures (FIN 48)	– Size

Panel B: Studies on determinants – tax aggressiveness (Section 2.4.1.2)

References	Disclosure type	Determinants
Akamah et al. (2018)	Segment reporting	– Tax aggressiveness
Ayers et al. (2015)	Deferred tax & BTB disclosures	– Tax aggressiveness
Balakrishnan et al. (2019)	Tax-related MD&A disclosure	– Tax aggressiveness
	Voluntary disclosures in earnings announcements & conference calls	– Tax aggressiveness
Belnap (2019a)	Tax strategy disclosures	– Tax aggressiveness
N. Chen et al. (2019)	Voluntary disclosures in earnings announcements & conference calls	– Tax (reporting) complexity / uncertainty
Dyrend et al. (2020)	Subsidiary list	– Tax aggressiveness
Ehinger et al. (2020)	Voluntary disclosures in earnings announcements & conference calls	– Tax (reporting) complexity / uncertainty
Flagmeier & Müller (2017)	Tax disclosures in financial statements in general	– Tax (reporting) complexity / uncertainty
Flagmeier et al. (2017)	Tax disclosures in financial statements in general	– Tax aggressiveness

References	Disclosure type	Determinants
Gramlich & Whiteaker-Poe (2013)	Subsidiary list	– Tax aggressiveness
Hardeck & Kirn (2016)	CSR reports	– Tax aggressiveness
Hardeck et al. (2019)	CSR reports	– Tax aggressiveness – Cultural imprint
Hope et al. (2013)	Segment reporting	– Tax aggressiveness
Inger et al. (2018)	Tax disclosures in financial statements in general	– Tax aggressiveness
Kao (2019)	CSR reports	– Tax aggressiveness
Koutney (2019)	Voluntary disclosures in earnings announcements & conference calls	– Tax (reporting) complexity / uncertainty
Krapat et al. (2016)	Subsidiary list	– Tax aggressiveness
Kubick et al. (2016)	Tax disclosures in financial statements in general	– Tax aggressiveness
L. A. Robinson & Schmidt (2013)	UTB disclosures (FIN 48)	– Tax aggressiveness
Schwab (2009)	Voluntary disclosures in earnings announcements & conference calls	– Tax aggressiveness
Ylönen & Laine (2015)	CSR reports	– Tax aggressiveness – Attitude towards CSR

Panel C: Studies on determinants – external pressure (Section 2.4.2)

References	Disclosure type	Determinants
Belnap (2019a)	Tax strategy disclosures	– NGO pressure / public attention
Dyreng et al. (2016)	Subsidiary list	– NGO pressure / public attention
Dyreng et al. (2020)	Subsidiary list	– Media coverage
Kubick et al. (2016)	Tax disclosures in financial statements in general	– Regulatory scrutiny
	Tax-related MD&A disclosure	– Regulatory scrutiny

Panel D: Studies on determinants – interaction between different disclosure types (Section 2.4.3)

References	Disclosure type	Interacting disclosure rule
Abernathy et al. (2013)	UTB disclosures (FIN 48)	– Schedule UTP
Bozanic et al. (2017)	UTB disclosures (FIN 48)	– Schedule UTP
	Tax disclosures in financial statements in general	– Schedule UTP
R. J. Brown et al. (2019)	Segment reporting	– CbCR - banks
Honaker & Sharma (2017)	UTB disclosures (FIN 48)	– Schedule UTP
Hope et al. (2013)	Segment reporting	– Schedule M-3
Kays (2019)	Voluntary additional public disclosures to tax return data	– Public tax return disclosure by tax authorities
Towery (2017)	UTB disclosures (FIN 48)	– Schedule UTP

Panel E: Studies on the informativeness (Section 2.5):

References	Disclosure type	Informativeness in terms of
Belnap (2019b)	Tax strategy disclosures	– Boilerplate language / similarity
Bilicka et al. (2020)	Tax strategy disclosures	– Boilerplate language / similarity
Blouin & Robinson (2020)	CbCR - OECD	– Comparison with other datasets
Bouvatier et al. (2018)	CbCR - banks	– Tax aggressiveness
R. J. Brown et al. (2019)	CbCR - banks	– Tax aggressiveness
Campbell et al. (2019)	Tax risk disclosures	– Future tax payments
Clausing (2020a)	CbCR - OECD	– Comparison with other datasets
Clausing (2020a)	CbCR - OECD	– Tax aggressiveness
Desai & Dharmapala (2009)	Deferred tax & BTM disclosures	– Tax aggressiveness
Dutt, Nicolay, et al. (2019)	CbCR - banks	– Tax aggressiveness
Dutt, Nicolay, et al. (2019)	CbCR - banks	– Comparison with other datasets
Fatica & Gregori (2020)	CbCR - banks	– Tax aggressiveness
Frank et al. (2009)	Deferred tax & BTM disclosures	– Tax aggressiveness
Garcia-Bernardo et al. (2019)	CbCR - OECD	– Comparison with other datasets
Horst & Curatolo (2020)	CbCR - OECD	– Comparison with other datasets
Janský (forthcoming)	CbCR - banks	– Tax aggressiveness
Lisowsky (2009)	Tax disclosures in financial statements in general	– Actual current tax liability / tax payments
Lisowsky (2010)	Tax disclosures in financial statements in general	– Tax aggressiveness
Lisowsky et al. (2013)	UTB disclosures (FIN 48)	– Tax aggressiveness
McGill and Outslay (2004)	Tax disclosures in financial statements in general	– Actual current tax liability / tax payments
McGill and Outslay (2004)	Tax disclosures in financial statements in general	– Tax aggressiveness
Mills (1998)	Deferred tax & BTM disclosures	– Tax aggressiveness
L. A. Robinson et al. (2016)	UTB disclosures (FIN 48)	– Future tax payments
Wilson (2009)	Deferred tax & BTM disclosures	– Tax aggressiveness

Panel F: Studies on firm reactions to tax disclosure regulations (Section 2.6.1.1)

References	Disclosure type	Reaction in terms of / effect on
Bilicka et al. (2020)	Tax strategy disclosures	– Tax aggressiveness
Blouin et al. (2010)	UTB disclosures (FIN 48)	– Avoidance of disclosure (i.a., bunching)
Bouvatier et al. (2018)	CbCR - banks	– Tax haven presences – Investment & real activity
Braun & Weichenrieder (2015)	TIEAs	– Tax haven presences – Investment & real activity
S. Chen (2017)	Public tax return disclosure by tax authorities	– Tax aggressiveness
De Simone & Olbert (2020)	CbCR - OECD	– Tax haven presences – Avoidance of disclosure (i.a., bunching) – Investment & real activity

References	Disclosure type	Reaction in terms of / effect on
Donohoe & McGill (2011)	Schedule M-3	– Tax aggressiveness
Dutt, Nicolay, et al. (2019)	CbCR - banks	– Tax aggressiveness
Eberhartinger et al. (2020)	CbCR - banks	– Tax haven presences
Green & Plesko (2016)	UTB disclosures (FIN 48)	– Tax aggressiveness
	Schedule M-3	– Tax aggressiveness
	Schedule UTP	– Tax aggressiveness
Gupta et al. (2014)	UTB disclosures (FIN 48)	– Tax aggressiveness
Hasegawa et al. (2013)	Public tax return disclosure by tax authorities	– Avoidance of disclosure (i.a., bunching)
Hasegawa et al. (2013)	Public tax return disclosure by tax authorities	– Tax aggressiveness
Henry et al. (2016)	UTB disclosures (FIN 48)	– Tax aggressiveness
	Schedule M-3	– Tax aggressiveness
	Schedule UTP	– Tax aggressiveness
Honaker & Sharma (2017)	Schedule UTP	– Tax aggressiveness
Hoopes et al. (2018)	Public tax return disclosure by tax authorities	– Tax aggressiveness – Avoidance of disclosure (i.a., bunching)
Hope et al. (2013)	Segment reporting	– Tax aggressiveness
Hugger (2020)	CbCR - OECD	– Tax aggressiveness – Avoidance of disclosure (i.a., bunching)
Joshi (2020)	CbCR - OECD	– Tax aggressiveness – Avoidance of disclosure (i.a., bunching)
Joshi et al. (2020)	CbCR - banks	– Tax aggressiveness
Overesch & Wolff (2019)	CbCR - banks	– Tax aggressiveness
Rauter (2020)	CbCR - extractive industries	– Investment & real activity
Slemrod et al. (2020)	Public tax return disclosure by tax authorities	– Avoidance of disclosure (i.a., bunching)
Tomohara et al. (2012)	UTB disclosures (FIN 48)	– Tax aggressiveness
Towery (2017)	Schedule UTP	– Tax aggressiveness

Panel G: Studies on firm reactions to actual disclosure of tax-related information (Section 2.6.1.2)

References	Disclosure type	Reaction in terms of / effect on
S. Chen et al. (2019)	Disclosure in press articles or by NGOs / leaks	– Tax aggressiveness
Dyreng et al. (2016)	Disclosure in press articles or by NGOs / leaks	– Tax aggressiveness – Tax haven presences
Gallemler et al. (2014)	Disclosure in press articles or by NGOs / leaks	– Tax aggressiveness – Executive turnover – Auditor turnover – Sales & advertising expenses
Kubick et al. (2016)	Tax-related SEC comment letters	– Tax aggressiveness – Tax aggressiveness of peer firms
O'Donovan et al. (2019)	Disclosure in press articles or by NGOs / leaks	– Tax aggressiveness – Sales & advertising expenses

Panel H: Studies on investor reactions to increases in tax transparency (Section 2.6.2.1)

References	Disclosure type	Reaction in terms of / effect on
Abernathy et al. (2013)	Schedule UTP	– Stock price reaction to increase in transparency
Bennedsen & Zeume (2018)	TIEAs	– Stock price reaction to increase in transparency
S. Chen (2017)	Public tax return disclosure by tax authorities	– Stock price reaction to increase in transparency
Donohoe & McGill (2011)	Schedule M-3	– Stock price reaction to increase in transparency
Dutt, Ludwig, et al. (2019)	CbCR - banks	– Stock price reaction to increase in transparency
Frischmann et al. (2008)	UTB disclosures (FIN 48)	– Stock price reaction to increase in transparency
Hoopes et al. (2018)	Public tax return disclosure by tax authorities	– Stock price reaction to increase in transparency
Hutchens et al. (2020)	Deferred tax & BTB disclosures	– Stockholdings of individual investors
Johannesen & Larsen (2016)	CbCR - extractive industries	– Stock price reaction to increase in transparency
O'Donovan et al. (2019)	Disclosure in press articles or by NGOs / leaks	– Stock price reaction to increase in transparency

Panel I: Studies on investor reactions to actual disclosure of tax-related information (Section 2.6.2.2)

References	Disclosure type	Association / reaction / effect on
Baik et al. (2016)	Analysts' (implicit) tax expense forecast	– (Mis)pricing of tax-related performance information
Blaufus et al. (2019)	Disclosure in press articles or by NGOs / leaks	– Stock price reaction to disclosure / increased scrutiny

References	Disclosure type	Association / reaction / effect on
Brooks et al. (2016)	Tax disclosures in financial statements in general	– Association between tax avoidance & firm value
	Disclosure in press articles or by NGOs / leaks	– Stock price reaction to disclosure / increased scrutiny
Campbell et al. (2019)	Tax risk disclosures	– (Mis)pricing of disclosed tax information
S. Chen (2017)	Public tax return disclosure by tax authorities	– Stock price reaction to disclosed tax information
A. B. Davis et al. (2017)	Disclosure in press articles or by NGOs / leaks	– Association between tax avoidance & firm value
Deméré (2018)	Tax return disclosure to selected recipients	– (Mis)pricing of tax-related performance information
Desai & Dharmapala (2009)	Deferred tax & BTB disclosures	– Association between tax avoidance & firm value
Dyreng et al. (2016)	Disclosure in press articles or by NGOs / leaks	– Stock price reaction to disclosure / increased scrutiny
Frischmann et al. (2008)	UTB disclosures (FIN 48)	– Stock price reaction to disclosed tax information
Gallemore et al. (2014)	Disclosure in press articles or by NGOs / leaks	– Stock price reaction to disclosure / increased scrutiny
Hanlon & Slemrod (2009)	Disclosure in press articles or by NGOs / leaks	– Stock price reaction to disclosure / increased scrutiny
Hoopes et al. (2018)	Public tax return disclosure by tax authorities	– Stock price reaction to disclosed tax information
Huesecken et al. (2018)	Disclosure in press articles or by NGOs / leaks	– Stock price reaction to disclosure / increased scrutiny
Inger (2014)	Tax disclosures in financial statements in general	– Association between tax avoidance & firm value
Inger et al. (2018)	Tax disclosures in financial statements in general	– Association between tax avoidance & firm value
Jemiolo (2019)	Disclosure in press articles or by NGOs / leaks	– Association between tax avoidance & firm value
Kays (2019)	Public tax return disclosure by tax authorities	– Stock price reaction to disclosed tax information
Mauler (2019)	Analysts' (implicit) tax expense forecast	– (Mis)pricing of tax-related performance information
Minnis & Sutherland (2017)	Tax return disclosure to selected recipients	– (Debt) investors' request for the information
L. A. Robinson & Schmidt (2013)	UTB disclosures (FIN 48)	– Stock price reaction to disclosed tax information
L. A. Robinson et al. (2016)	UTB disclosures (FIN 48)	– (Mis)pricing of disclosed tax information
Schwab (2009)	Voluntary disclosures in earnings announcements & conference calls	– (Mis)pricing of tax-related performance information
Wilson (2009)	Deferred tax & BTB disclosures	– Association between tax avoidance & firm value

Panel J: Studies on the effects on analysts (Section 2.6.3.1)

References	Disclosure type	Reaction in terms of / effect on
Bratten et al. (2017)	Mandatory ETR forecasts in interim reports	– Incorporation into forecasts – Effect on forecast accuracy
K. C. W. Chen et al. (2003)	Deferred tax & BTD disclosures	– Incorporation into forecasts
N. Chen et al. (2019)	Mandatory ETR forecasts in interim reports	– Incorporation into forecasts – Effect on forecast accuracy
	Voluntary disclosures in earnings announcements & conference calls	– Incorporation into forecasts – Effect on forecast accuracy
Koutney (2019)	Voluntary disclosures in earnings announcements & conference calls	– Incorporation into forecasts – Effect on forecast accuracy
Schwab (2009)	Voluntary disclosures in earnings announcements & conference calls	– Incorporation into forecasts – Effect on forecast accuracy
Weber (2009)	Deferred tax & BTD disclosures	– Incorporation into forecasts – Effect on forecast accuracy

Panel K: Studies on the effects on consumers and the general public (Section 2.6.3.2)

References	Disclosure type	Reaction in terms of / effect on
Antonetti & Anesa (2017)	Disclosure in press articles or by NGOs / leaks	– Sentiment / perception – Purchase intention
Asay et al. (2018)	Disclosure in press articles or by NGOs / leaks	– Awareness / sensitivity – Purchase intention
Gallemore et al. (2014)	Disclosure in press articles or by NGOs / leaks	– Sentiment / perception
Hardeck & Hertl (2014)	Disclosure in press articles or by NGOs / leaks	– Sentiment / perception – Purchase intention – Willingness to pay
Hardeck et al. (forthcoming)	Disclosure in press articles or by NGOs / leaks	– Sentiment / perception – Willingness to pay
Hoopes et al. (2018)	Public tax return disclosure by tax authorities	– Sentiment / perception – Purchase intention
Jemiolo (2019)	Disclosure in press articles or by NGOs / leaks	– Sentiment / perception – Willingness to pay – Purchase intention

Panel L: Studies on the effects on tax authorities (Section 2.6.3.3)

References	Disclosure type	Reaction in terms of / effect on
Bozanic et al. (2017)	UTB disclosures (FIN 48)	– Utilization & processing of the information

Notes: This table provides a structured overview of extant empirical literature on tax transparency. The different panels of the table follow the structure of our review in Sections 2.4-2.6. Studies investigating multiple research questions may appear in multiple panels of the table. Within each panel, the references are sorted alphabetically.

B. Appendix to Section 3

Appendix 3: Constructs, Items, and Sources

Code	Construct	Original item	Adaptation	Reference
ITB1	Purchasing intentions	I am very likely to buy ticket from Travelocity.com	I would be very likely to book at the selected provider	Gefen and Straub (2003)
ITB2		I would use my credit card to purchase from Travelocity.com	I would stay at the selected provider' s apartment	
ITB3		I would not hesitate to provide information about my habits to Travelocity	I would not hesitate to request a booking with the selected provider	
MN1	Moral norms	It is my moral obligation to other people and/or the environment that I recycle my waste in the Blue Bins	It is my moral obligation to other people and/or the society that I book at providers that pay their taxes	Botetzagias et al. (2015)
MN2		It is morally responsible to other people and/or the environment that I recycle my waste in the Blue Bins	It is morally responsible to other people and/or the society to book at providers that pay their taxes	
MN3			I would have moral scruples to book at providers that do not pay their taxes	
TIP1	Trust in provider	As an auction host/intermediary, Amazon can be trusted at all times	The selected listing' s provider can be trusted	Own
TIP2		As an auction host/intermediary, Amazon can be counted on to do what is right	The selected listing' s provider can be counted on to do what is right	
TIP3		As an auction host/intermediary, Amazon has high integrity	The selected listing' s provider has high integrity	
TIP4		Amazon is a competent and knowledgeable auction host/intermediary	The selected listing' s provider is competent and knowledgeable	

Appendix 4: Demographic and Constructs, Manipulation Check Items, and Sources

Code	Construct	Original item	Adaption	Reference
DTT1	Trusting dispositions	I generally trust other people	I generally trust other people	Gefen and Straub (2004)
DTT2		I tend to count upon other people	I tend to count upon other people	
DTT3		I generally have faith in humanity	I generally have faith in humanity	
DTT4		I feel that people are generally well meaning	I feel that people are generally well meaning	
DTT5		I feel that people are generally trustworthy	I feel that people are generally trustworthy	
DTT6		I feel that people are generally reliable	I feel that people are generally reliable	
FAM1	Familiarity	I am familiar with searching for books on the Internet	I am familiar with searching for apartments on the Internet	Gefen and Straub (2004)
FAM2		I am familiar with buying books on the Internet	I am familiar with renting apartments on the Internet	
FAM3		I am familiar with Amazon.com	I am familiar with platforms such as Airbnb, Home-stay, 9flats, or similar	
FAM4		I am familiar with inquiring about book ratings at Amazon.com	I am familiar inquiring about apartment and provider ratings at Airbnb, Homestay, 9flats, or similar	
MC1	Manipulation check label		I am confident the selected provider is paying taxes for renting the apartment	Own
MC2	Manipulation check price		I perceive this apartment to be relatively expensive	Own
CTR1	Control question		Please check the second box from the left	Own

C. Appendix to Section 4**Appendix 5: Country Breakdown of Sample Firms**

Country	Frequency	Percent
Austria	20	2.89%
Belgium	26	3.76%
Cyprus	6	0.87%
Czech Republic	2	0.29%
Germany	129	18.67%
Denmark	26	3.76%
Spain	44	6.37%
Finland	37	5.35%
France	128	18.52%
Greece	7	1.01%
Croatia	2	0.29%
Hungary	3	0.43%
Ireland	34	4.92%
Italy	53	7.67%
Luxembourg	24	3.47%
Malta	1	0.14%
Netherlands	51	7.38%
Poland	27	3.91%
Portugal	11	1.59%
Romania	2	0.29%
Sweden	55	7.96%
Slovenia	3	0.43%
Total	691	100.0%

Notes: Appendix 5 shows a geographic breakdown by countries of our sample. The assignment of a firm to a country is based on the ISO 3166-1 alpha-2 (ISO-2) country code provided by Orbis. The sample selection process is described in detail in Table 10.

Appendix 6: Robustness Tests for February 25

	(1) S&P Global 1200	(2) Winsorize	(3) Announcements	(4) Winsorize & Announcements
Constant	0.034 (0.549)	0.029 (0.504)	0.040 (0.647)	0.034 (0.607)
Market Return	0.740*** (11.01)	0.636*** (13.07)	0.716*** (10.69)	0.631*** (12.72)
Event	1.138 (0.656)	0.678 (0.403)	0.820 (0.477)	0.596 (0.371)
Observations	182,424	182,424	148,368	148,368
Standard errors clustered on firm-level	Yes	Yes	Yes	Yes
Standard errors clustered on trading days	Yes	Yes	Yes	Yes
Firms	691	691	562	562
Adj.-R ²	0.16	0.17	0.16	0.17

Notes: Appendix 6 presents the regression results for a series of robustness checks, using the market model in equation 1: $r_{it} = \alpha + \beta r_{mt} + \gamma Event_t + \varepsilon_{it}$. r_{it} is the realized return of firm i on trading day t , r_{mt} is the realized return of the market portfolio (MSCI World) and $Event_t$ is a dummy variable indicating trading days within the (0,1) event window. ε_{it} is the error term and captures all effects that are not included in the model. Using the initial specification from our baseline analysis, we analyze the alternative event on February 25 using a (0,1) event window and an estimation windows of one year (i.e., (-267,-6)) across all specifications. Column 1 shows the results when using the S&P Global 1200 as an alternative benchmark portfolio to the MSCI World. Column 2 shows the results when winsorizing firm and market returns at the 1st and 99th percentile to limit the effect of potential outliers. Column 3 shows the results when excluding firms that made an earnings announcement in a (-2,2) window around the event date. In Column 4, we winsorize firm and market returns and additionally exclude firms with earnings announcements in a (-2,2) window around the event date. Robust t-statistics in parentheses.

*, **, and *** indicate statistical significance at the 10, 5, and 1 percent levels, respectively.

Appendix 7: Robustness Tests for June 2 and 3-Month Estimation Period

	(1) Baseline	(2) S&P Global 1200	(3) Winsorize	(4) Announcements	(5) Winsorize & Announcements
Constant	0.107 (1.532)	0.108 (1.578)	0.099 (1.455)	0.107 (1.530)	0.099 (1.452)
Market Return	0.505*** (4.43)	0.508*** (4.199)	0.491*** (4.387)	0.506*** (4.435)	0.492*** (4.392)
Event	-0.390** (2.587)	-0.426** (-2.596)	-0.374** (-2.554)	-0.381** (-2.586)	-0.366** (-2.550)
Observations	44,915	44,915	44,915	44,655	44,655
Standard errors clustered on firm- level	Yes	Yes	Yes	Yes	Yes
Standard errors clustered on trading days	Yes	Yes	Yes	Yes	Yes
Firms	691	691	691	687	687
Adj.-R ²	0.03	0.04	0.04	0.03	0.04

Notes: Appendix 7 presents the regression results for a series of robustness checks, using the market model in equation 1: $r_{it} = \alpha + \beta r_{mt} + \gamma Event_t + \varepsilon_{it}$. r_{it} is the realized return of firm i on trading day t , r_{mt} is the realized return of the market portfolio (MSCI World) and $Event_t$ is a dummy variable indicating trading days within the (0,1) event window. ε_{it} is the error term and captures all effects that are not included in the model. Using the initial specification from our baseline analysis, we analyze the main event on June 2 using a (0,1) event window and an estimation windows of three months (i.e., (-68,-6)) across all specifications. Column 1 shows the baseline results when using the shorter estimation period. Column 2 shows the results when using the S&P Global 1200 as an alternative benchmark portfolio to the MSCI World. Column 3 shows the results when winsorizing firm and market returns at the 1st and 99th percentile to limit the effect of potential outliers. Column 4 shows the results when excluding firms that made an earnings announcement in a (-2,2) window around the event date. In Column 5, we winsorize firm and market returns and additionally exclude firms with earnings announcements in a (-2,2) window around the event date. Robust t-statistics in parentheses.

*, **, and *** indicate statistical significance at the 10, 5, and 1 percent levels, respectively.

Appendix 8: Robustness Tests for February 25 and 3-Month Estimation Period

	(1) Baseline	(2) S&P Global 1200	(3) Winsorize	(4) Announcements	(5) Winsorize & Announcements
Constant	0.144** (2.101)	0.147** (2.137)	0.125* (1.884)	0.151** (2.222)	0.131* (1.989)
Market Return	0.522*** (5.309)	0.499*** (5.313)	0.508*** (5.322)	0.521*** (5.388)	0.506*** (5.345)
Event	0.116 (0.073)	0.174 (0.116)	0.195 (0.125)	0.048 (0.032)	0.107 (0.072)
Observations	46,920	46,920	46,920	38,148	38,148
Standard errors clustered on firm- level	Yes	Yes	Yes	Yes	Yes
Standard errors clustered on trading days	Yes	Yes	Yes	Yes	Yes
Firms	690	690	690	561	561
Adj.-R ²	0.02	0.02	0.03	0.02	0.03

Notes: Appendix 8 presents the regression results for a series of robustness checks, using the market model in equation 1: $r_{it} = \alpha + \beta r_{mt} + \gamma Event_t + \varepsilon_{it}$. r_{it} is the realized return of firm i on trading day t , r_{mt} is the realized return of the market portfolio (MSCI World) and $Event_t$ is a dummy variable indicating trading days within the (0,1) event window. ε_{it} is the error term and captures all effects that are not included in the model. Using the initial specification from our baseline analysis, we analyze the alternative event on February 25 using a (0,1) event window and an estimation windows of three months (i.e., (-71,-6)) across all specifications. Column 1 shows the baseline results when using the shorter estimation period. Column 2 shows the results when using the S&P Global 1200 as an alternative benchmark portfolio to the MSCI World. Column 3 shows the results when winsorizing firm and market returns at the 1st and 99th percentile to limit the effect of potential outliers. Column 4 shows the results when excluding firms that made an earnings announcement in a (-2,2) window around the event date. In Column 5, we winsorize firm and market returns and additionally exclude firms with earnings announcements in a (-2,2) window around the event date. Robust t-statistics in parentheses.

*, **, and *** indicate statistical significance at the 10, 5, and 1 percent levels, respectively.

Appendix 9: Description of Employed Variables

Variable	Description	Data Source
B2C	Dummy variable indicating observations from firms with a higher (value = 1), respectively lower (value = 0) salience to the consumer.	SIC codes are retrieved from Orbis. Own classification.
Competitor growth	Dummy variable indicating observations in the 4 th and 5 th quintile in terms of their 10-year competitor growth rate, which is computed as follows: (Number of identified industry peers in 2019 / Number of identified industry peers in 2009) - 1	Industry classification and industry peer information retrieved from Orbis.
ESG Score	Dummy variable indicating observations in the 1 st and 2 nd quintile in terms of Refinitiv's Governance Pillar Score. The Governance Pillar Score is computed as the weighted average rating of a firm based on the reported governance information.	Datastream.
ETR	Dummy variable indicating observations in the 1 st and 2 nd quintile in terms of their cash effective tax rate, which is computed as follows: Income taxes paid as stated in the cash flow statement / pretax income * 100.	Income taxes paid and pretax income are retrieved from Worldscope.
Event	Dummy variable indicating observations that fall into the respective event window.	-
HHI	Dummy variable indicating observations in the 1 st and 2 nd quintile in terms of the Herfindahl-Hirschmann Index, which is computed as follows: $HHI = 10,000 * \sum_{i=1}^N a_i^2$, where a_i represents the individual market share of industry peer i .	Turnover, industry classification, and industry peer information are retrieved from Orbis.
Intangibles	Dummy variable indicating observations in the 4 th and 5 th quintile in terms of Intangible-to-total assets ratio, which is computed as follows: Intangible assets / Total assets * 100	Intangible and total asset figures are retrieved from Worldscope.
Market Return	Daily stock return stated in percent, based on the Total Return Index (RI). Contingent on the specification, the market return either depicts the return of the MSCI World or the S&P Global 1200.	Datastream.
MSCI World Return	Daily stock return of the MSCI World stated in percent, based on the Total Return Index (RI).	Datastream.
ROA	Dummy variable indicating observations in the 4 th and 5 th quintile in terms of their five-year return on assets ratio.	Return on asset ratios are retrieved from Worldscope
S&P Global 1200 Return	Daily stock return of the S&P Global 1200 stated in percent, based on the Total Return Index (RI).	Datastream.

Stock Return	Daily stock return of our sample firms stated in percent, based on the Total Return Index (RI).	Datastream.
Total Return Index (RI)	<p>The Total Return Index (RI) represents a theoretical value growth by assuming that dividends are reinvested to purchase additional units of the respective stock. It is calculated using a method in which the discrete quantity of dividend paid is added to the price on the ex-dividend date. That is, RI is computed as follows:</p> $RI_t = RI_{t-1} * \frac{p_t}{p_{t-1}}$ <p>where p_t equals the price on date t and p_{t-1} equals the price on the previous date. If t equals the ex-date of dividend payment D_t, the method adjusts as follows: $RI_t = RI_{t-1} * \frac{p_t + D_t}{p_{t-1}}$.</p>	Datastream.
Turnover growth	<p>Dummy variable indicating observations in the 1st and 2nd quintile in terms of their respective industry's 10-year turnover growth, which is computed as follows:</p> $(\text{Total industry turnover in 2019} / \text{Total industry turnover in 2009}) - 1$	Turnover, industry classification, and industry peer information are retrieved from Orbis.
Treatment	Dummy variable indicating firms that are affected by the public CbCR scheme (i.e., firms that are headquartered in the EU and whose consolidated turnover exceeded EUR 750m in the preceding two financial years).	Turnover and headquarter location data are retrieved from Orbis.

Notes: Appendix 9 lists all variables used for the analyses in Section 4, including a description and the respective data sources.

D. Appendix to Section 5

Appendix 10: Main Category Evaluation by Stakeholder Group

Main category	NGOs & trade/labor organization		Business representative		Investors		Others	
	Approval	Comments	Approval	Comments	Approval	Comments	Approval	Comments
Uniform rules	67%	3	100%	38	100%	4	100%	3
Adjustments related to threshold	95%	19	55%	33	0%	1	100%	1
Expanded scope	94%	8	43%	32	100%	1	-	0
Reporting format	75%	8	78%	43	50%	2	0%	1
Inclusion of additional information	85%	6	26%	44	83%	2	-	0
Public disclosure of CbCR	100%	18	18%	11	100%	3	100%	2

Notes: Appendix 10 evaluates the approval and number of stakeholders commenting on each main category within a single stakeholder group. The stakeholder group is shown in the top row and the number of stakeholder comments submitted dealing with each main category (at least one comment on one of the subcategories) are registered in the columns "Comments". For each general category the average approval rate is calculated by using the rules outlined in Section 5.3.3.

Appendix 11: Subcategory Evaluation by Stakeholder Group

Main category	Subcategory	NGOs & trade/ labor organization		Business representative		Investors		Others	
		Approval	Comments	Approval	Comments	Approval	Comments	Approval	Comments
1) Uniform rules	a) Uniform rules	67%	3	100%	38	100%	4	100%	3
	a) Reduction of the selected threshold	95%	19	14%	29	0%	1	100%	1
	b) Multi-year approach	63%	4	87%	19		0		0
	c) Currency rebasing	100%	3	88%	20		0		0
2) Adjustments related to threshold	a) Single entities operating through PEs	100%	7	55%	21		0		0
	b) Groups under the common control of individual(s)	80%	5	36%	21	100%	1		0
	c) Extraordinary income	92%	6	26%	19		0		0
	d) Investment activity	90%	5	40%	21		0		0
4) Reporting format	a) Use of aggregated instead of consolidated data	40%	5	85%	43	50%	2	0%	1
	b) Reporting of transparent and stateless entities	88%	8	47%	19		0		0
5) Inclusion of additional information	a) Additional columns Table I	75%	6	7%	42	50%	1		0
	b) Deferred taxes	80%	5	31%	21		0		0
	c) R&D information	75%	4	8%	19		0		0
	d) XML-Information	100%	3	46%	24		0		0
6) Public disclosure of CbCR	a) Public disclosure obligation	100%	17	10%	10	100%	3	100%	1
	b) Convergence towards GRI standard	100%	15	100%	2	100%	1	100%	1

Notes: Appendix 11 evaluates the approval and number of stakeholders commenting on a subcategory within a single stakeholder group. The stakeholder group is shown in the top row. For each subcategory the average approval rate is calculated by using the rules outlined in Section 5.3.3.

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