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Reporting Behavior and Transparency in European Banks' Country-by-Country Reports

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Abstract:

The public CbCR requirement for EU financial institutions leaves leeway to the reporting firms as regards the calculating and presentation of the data. Based on a sample of CbCRs published by EU-headquartered multinational bank groups, we analyze the reporting behavior and the degree of transparency across the reports. We observe a large heterogeneity with respect to the place of publication of the CbCR, its content, the readability of the data tables as well as the list of entities that should be published together with the by-country data. We also identify differences between headquarter countries, with CbCRs prepared by bank groups from the United Kingdom and Germany being the most transparent. Inconsistencies in reporting inhibit the interpretability and the comparability of the data. We conclude that the specification of the underlying data source and of the applicable consolidation scope as well the establishment of uniform definitions of the reportable items are essential for an appropriate consideration of the reports by all addressees. Our analyses are particularly important in light of the proposal for a public CbCR for large multinational firms in the EU.

JEL Classification: H25, H26, G21, G28

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1 Introduction

During the debate on base erosion and profit shifting by large multinational enterprises, the claim for the disclosure of certain tax-related data on a by-country basis, the so-called country-by-country reporting (CbCR), has intensified. While the proposal for a public CbCR for all large multinational firms in the EU is still under discussion (European Commission, 2016; European Parliament, 2019; Council of the EU, 2019), several CbCR initiatives are already in place, allowing to draw lessons concerning their effectiveness. In particular, Article 89 of the Capital Requirements Directive IV (CRD IV)¹ introduced a public CbCR requirement for EU financial institutions for financial years 2014 onwards. The public availability of the reports is supposed to allow both the tax authorities and the general public to better assess whether banks are paying their “fair share of taxes” in the countries where they operate. However, the lack of clear and uniform guidelines on the definition and the presentation of the reportable items arises in reporting heterogeneity across Member States and bank groups, which impedes the interpretability and the comparability of the reports. Given that the CbCR obligation imposes additional direct and indirect costs (Dutt et al., 2020), it seems worthwhile to ensure that the different ways of calculating and presenting the information do not diminish the added value of CbCR.

We analyze the reporting heterogeneity across CbCRs published by EU-headquartered multinational bank groups for financial years 2014-2016, considering in particular both the content of the reports, such as explanations on the underlying way of calculation or the provision of additional information, and the readability of the data. We shed more light on the

¹ Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC, *Official Journal of the European Union*, 56(L 176), 338–436 (27 June 2013).

degree of transparency of the CbCRs, i.e. how transparently and comprehensively the data is presented and how accessible the information is for the addressees. Our analyses allow us to identify which open points inhibit the readability and the interpretability of the reports. We also determine relationships between the reporting behavior and bank characteristics, such as the headquarter country, the bank group size or the intensity of tax haven usage. Ultimately, we suggest a best practice approach on CbCR in order to improve the information content and the comparability of the reports. Our insights are particularly important in light of the ongoing political discussion on the introduction of a public CbCR for all multinational firms in the EU with revenues exceeding EUR 750 million (European Commission, 2016; European Parliament, 2019; Council of the EU, 2019).

We rely on a dataset of CbCRs collected by Dutt, Nicolay et al. (2019) which contains CbCR data for multinational bank groups headquartered in the EU for the years 2014-2016. For each CbCR included in their dataset, we define and manually code variables that reflect the reporting behavior. They refer to the place of publication of the CbCR, the CbCR content, the readability of the tables containing the CbCR data and the list of entities that should be published together with the reportable items. A higher value of the variables implies more transparency or a better readability. Our analysis is threefold: First, we descriptively analyze the reporting heterogeneity across our sample of CbCRs, also considering differences between bank groups headquartered in different countries. Second, we aggregate single variables to transparency scores in order to identify bank groups and headquarter countries that are particularly (in-)transparent in certain dimensions. Third, we develop guidelines to avoid the inconsistencies in reporting identified above and to improve the effectiveness of CbCR.

Our main findings are as follows. We observe that most bank groups prefer including the CbCR in their annual report over the publication as a separate document on their website. The majority of the reports contain measures that facilitate finding the data, such as the use of the

expression “CbCR” or a reference to the legal basis of the reporting requirement. Article 89 of the CRD IV does not specify the reportable items further. The following open points result in different ways of calculating the data.

- (1) Most CbCRs provide no information on their way of defining the “consolidated basis” on which the disclosure should be made. German bank groups exhibit the highest transparency with almost two third relying on the accounting consolidation scope. The consolidation scope of the applicable accounting standards is regularly broader than the prudential scope of consolidation and allows for a better comparison to the consolidated financial statements.
- (2) Information on the underlying data source and on the treatment of intra-group transactions is mostly missing in the CbCRs, which impedes the interpretability of the data both within the report (i.e. comparability of profits and taxes as well as across reported countries) and between different reports. From those bank groups that provide additional information, the majority claim to prepare the CbCR on the same basis as the consolidated financial statements. Intra-group transactions, though, are in most cases not eliminated. Only a fifth of the CbCRs in our sample contain a quantification of the differences between the CbCR data and the consolidated financial statements data.
- (3) Since “turnover” is not naturally part of the financial statements of financial institutions, we observe a wide variety of different expressions for reporting the “turnover” item. Some bank groups, in particular in Austria and France, report two turnover variables, which is in line with national provisions. More than half of the reports provide additional explanations on the composition of the reported turnover item(s).

- (4) As regards the number of employees on a full-time equivalent basis, differences among CbCRs arise with respect to the point in time to which the reported number refers (i.e. yearly average vs. at year-end or at the reporting date) and to the inclusion or exclusion of particular worker groups. Depending on the personnel structure, different ways of calculating the number of employees can result in substantially different reported figures.
- (5) Article 89 of the CRD IV does not specify how “tax on profit or loss” should be defined. The different possible understandings of the tax variable influence the conclusions that can be drawn from the variable itself as well as regarding the link between reported taxes and profits. Almost half of the CbCRs in our sample report at least one tax item of which the exact meaning is unclear. As some Member States prescribe the reporting of a specific tax variable, we observe systematic differences between headquarter countries. Bank groups headquartered in the United Kingdom consistently report tax paid, whereas French bank groups predominantly disclose both current and deferred tax expense. Bank groups from Sweden and Germany have a clear preference for the accounting tax expense. A fifth of the CbCRs report more than one tax item.

Although the by-country data should be published separately for each jurisdiction where the institution has an establishment, some bank groups pool several countries into a single entry, which comes at the cost of transparency. However, the relative importance of these collective countries in terms of the number of employees and profit before tax is in most cases negligible. We also observe that some CbCRs contain information that goes beyond the requirements of the CRD IV, thus being particularly transparent. Examples are the provision of explanations that help to interpret the data, the reporting of additional variables as well as the inclusion of item totals and previous-year data. The readability of the tables containing the CbCR data is in

most cases satisfactory, i.e. most bank groups align numbers to the decimal point, use monospaced numbers, separate thousands by comma or dot and arrange countries in rows and items in columns. We regularly detect room for improvement as regards the table design and an additional visualization of the data. The list of subsidiaries and branches which should be published together with the CbCR data is often not included in the CbCR and frequently lacks information on branches.

Since our variables are defined in such a way that a higher value implies more transparency or a better readability, we can add up the values of different variables in order to achieve an overall figure which reflects the degree of transparency across several variables. We construct three different transparency scores: The *content score* reflects the degree of transparency across the variables that relate to the CbCR content, i.e. the way of calculation of the reportable items and the provision of additional information. The *readability score* relates to the structure and presentation of the CbCR data tables. The *overall score* is composed of the content score and of the readability score and also takes into consideration the place of publication of both the CbCR and the list of entities. The scores are normalized to 100, whereby a score of 100 (0) indicates the highest (lowest) possible degree of transparency. We find that CbCRs published by bank groups headquartered in the United Kingdom and Germany achieve on average the highest overall scores, whereas Austrian bank groups perform worst on average. This effect is mainly driven by differences with respect to the CbCR content, while the variation of the readability of the data tables is low among the headquarter countries. Still, even for those bank groups that perform best in our analyses, the reporting behavior leaves room for improvements. We also observe that large bank groups and bank groups with a high share of tax havens disclose their activities in a comparatively transparent CbCR.

We suggest guidelines on CbCR that aim to close the regulatory loopholes identified above in order to ensure a consistent interpretation of the reports across different bank groups and

countries, thus increasing the information content of CbCR. Above all, the specification of the underlying data source and of the applicable consolidation scope as well as the establishment of uniform definitions of the reportable items are indispensable. A standardized template, similar to the model template of the OECD (OECD, 2015, pp. 29–30), could further support the reader in processing the information and would facilitate comparisons across bank groups.

Our study sheds more light on CbCR, notably on the informative value of the public CbCR requirement in the banking sector. A few recent studies analyze the effectiveness of Article 89 of the CRD IV. They document that EU banks adapted their tax avoidance behavior to some extent (Joshi et al., 2020; Overesch & Wolff, 2020) and reduced their presence in tax havens (Eberhartinger et al., 2020) in response to CbCR. However, the findings of Dutt, Ludwig et al. (2019) suggest an overall zero response of the capital market to the introduction of the disclosure obligation. Empirical evidence on the information content of the published data itself is growing (Bouvatier et al., 2018; Brown et al., 2019; Dutt, Nicolay et al., 2019; Fatica & Gregori, 2020; Janský, 2020). The authors agree that the publicly available CbCR data of EU financial institutions reveals the extent of banks' presence in tax havens and a misalignment between profits and employees. We complement prior literature investigating the CbCR key data itself by analyzing how transparently and comprehensively the information is presented. The way of preparing the reports is essential for a consistent interpretation of the data by the public and by tax authorities. Ultimately, we make an important contribution by identifying open points that diminish the added value and effectiveness of CbCR.

Our findings are, at least partly, also generalizable to other CbCR initiatives, such as the confidential CbCR of the OECD that applies to large multinational firms (OECD, 2015). Although the OECD provides a model template (OECD, 2015, pp. 29–30), detailed instructions (e.g. OECD, 2015, pp. 31–35, 2019a, 2019b) and more specific items (e.g. differentiation between income tax paid and income tax accrued instead of “tax on profit or loss”), it also offers

leeway to the reporting firms. For instance, the underlying data source and the calculation of the number of employees are specified neither by the OECD nor by most of the implementing countries (Spengel et al., 2019). Still, the risk of misinterpretations due to the lack of standardized rules is attenuated by the fact that firms are encouraged to describe which calculation methods they use (OECD, 2015, p. 32). In addition, the data is only reported confidentially to the tax authorities, such that potentially wrong conclusions by the general public cannot occur. The current CbCR proposal for large EU multinationals (European Commission, 2016; European Parliament, 2019; Council of the EU, 2019), though, also foresees a publication of the data. Clear guidelines for preparing the reports are essential in order to make sure that the data can be considered appropriately by all addressees.

The remainder of this paper is structured as follows: Section 2 provides information on the CbCR requirement for EU financial institutions and reviews prior literature related to our study. Section 3 describes the construction of our dataset. In Section 4, we analyze the CbC reporting behavior of European bank groups headquartered in different countries. Based on our findings, we develop a best practice approach on CbCR in Section 5. Section 6 concludes.

2 Background and prior literature

2.1 The CbCR requirement for EU financial institutions

After the financial crisis, the need for more transparency and stricter regulations for financial institutions increased. In that regard, the CRD IV, accompanied by the Capital Requirements Regulation (CRR),² was adopted in June 2013. The package implements the Basel III standards, including for instance stricter requirements on capital, liquidity and

² Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012, *Official Journal of the European Union*, 56(L 176), 1–337 (27 June 2013).

leverage and new provisions on corporate governance and remuneration, into EU law. Article 89 of the CRD IV provides for a public CbCR for EU credit institutions and investment firms.³ In light of the large public subsidies for the banking sector during the financial crisis, more transparency on banks' worldwide activities should enable the public to assess whether the taxes paid in the different jurisdictions reflect real economic activity appropriately (European Commission, 2014, p. 3). The reporting obligation comprises the public disclosure of turnover, the number of employees, profit or loss before tax, tax on profit or loss and public subsidies received for every country in which the group operates. In addition, the institutions are required to list the name, geographical location and nature of activities of their subsidiaries and branches (referred to as "list of entities" in the following). EU-headquartered bank groups have to prepare a CbCR for the whole group, whereas groups headquartered in third countries only have to disclose data on their EU entities, including their subsidiaries and branches. After having been audited, the reports shall be published as an annex to the financial statements. The CbCR requirement is effective from 1 January 2015, i.e. the first disclosure should relate to financial years beginning on or after 1 January 2014.⁴

³ The CbCR requirement for EU financial institutions is one of the first CbCR initiatives. Section 1504 of the Dodd-Frank Wall Street Reform and Consumer Protection Act 2010 foresees a public disclosure requirement for firms in the extractive industries, but has not yet come into effect due to ongoing disagreement on the final rules to be issued by the Securities and Exchange Commission (SEC) (SEC, 2019). Similarly, under Chapter 10 of the EU Accounting Directive (Directive 2013/34/EU), large EU undertakings in the extractive industry are required to publicly disclose certain payments made to governments. For financial years starting on or after 1 January 2016, the OECD introduced a confidential CbCR vis-à-vis the tax authorities for multinational firms with consolidated revenues of at least EUR 750 million in the preceding year (OECD, 2015). The European Commission has developed a draft directive which resembles the OECD CbCR but provides for a public reporting (European Commission, 2016). The European Parliament and the Presidency of the Council of the European Union have brought forward several amendments and compromise proposals (e.g. European Parliament, 2019; Council of the EU, 2019), but a final agreement has not yet been reached. Finally, with effect from 1 January 2021, the Global Reporting Initiative (GRI) has established a CbCR standard to which firms can voluntarily adhere (Global Sustainability Standards Board (GSSB), 2019).

⁴ From 1 July 2014 to 1 January 2015, the information to be disclosed was limited to the name, geographical location and nature of activities of the institutions' entities as well as to the amount of turnover and the number of employees. Global systemically important institutions (GSIIs), though, had to submit the complete information to the European Commission on a confidential basis. Based on this data, the European Commission, in cooperation with PricewaterhouseCoopers, conducted an assessment as regards potential negative economic consequences of a public disclosure (PricewaterhouseCoopers, 2014b). On 30 October 2014, the European Commission informed the European Parliament and the Council of the European Union on the outcome of its study and decided that the CbCR requirement should apply in full as originally foreseen (European Commission, 2014).

Being secondary law, the CRD IV must be transposed into the national laws of the EU Member States. Article 89 of the CRD IV lacks clear guidelines on the definition and the presentation of the reportable items. Aiming at a consistent interpretation of European legislation, the European Banking Authority (EBA) provides answers to questions submitted by interested and affected parties as regards the application or implementation of certain provisions. Though, these answers are not binding (EBA, 2019). Ultimately, the exact interpretation of the provisions set out in Article 89 of the CRD IV is up to the discretion of the Member States (PricewaterhouseCoopers, 2014a, p. 2), and – in case they do not provide further guidance either – up to the reporting banks’ discretion. Table 1 gives an overview of the transposition of different aspects that remain open in Article 89 of the CRD IV into the national laws of selected Member States,⁵ including clarifications provided by the EBA during the Question & Answer process. The most important similarities and differences across the Member States are highlighted in the following.⁶

- (1) While Article 89 of the CRD IV only states that the report shall be published as an annex to the financial statements, several countries offer more concrete options to the banks as to where to make their CbCR publicly available, e.g. as part of the annual report or as a separate document on the bank’s website (see also EBA, 2014b).
- (2) The CbCR should be prepared on a “consolidated basis”, whereby the wording of Article 89 of the CRD IV leaves open what consolidation scope should be used. The EBA recommends to use the prudential scope of consolidation as defined by the CRR, but provides that Member States can also require a broader consolidation scope (EBA, 2014d). The latter alternative is followed by France (Art. L511-45 Code monétaire et

⁵ The selection is based on countries for which at least 15 CbCRs are included in our sample and where national laws and guidelines could be interpreted reliably. For other countries where we could only find single provisions (Austria, Luxembourg, the Netherlands, Sweden), these are shortly described in the following sections.

⁶ See Section 4 for a detailed discussion of the advantages and disadvantages of different ways of defining and presenting the required information.

financier), Germany (Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin), 2015) and the United Kingdom (HM Treasury, 2013b), which refer to the consolidation scope of the applicable accounting standards.

- (3) Article 89 of the CRD IV does not prescribe what data source should be used for the calculation of profit or loss before tax. In Italy (Circolare n. 285 del 17 dicembre 2013, Parte Prima, Titolo III, Capitolo 2) and the United Kingdom (HM Treasury, 2013a), this item shall be consistent with that in the institution's income/ financial statements. According to the EBA, the CbCR data shall be presented "before adjustments for intra-group cross-border transactions and other consolidated adjustments" (EBA, 2014c). Germany is the only country that provides further guidance in this regard, according to which the CbCR shall be prepared on a gross basis, whereby institutions can decide whether they consolidate intra-group transactions within countries (BaFin, 2015).
- (4) Turnover is not naturally part of banks' financial statements and thus leaves room for interpretation. The EBA recommends that this item shall be in line with the institution's financial statements and interpreted for instance as total net banking income, defined as "total net income before impairment and operating expenses, but including net interest income, net fees and commissions income, net trading income and other operating income" (EBA, 2014e). Germany (BaFin, 2015), the United Kingdom (HM Treasury, 2013a) and Italy (Circolare n. 285 del 17 dicembre 2013, Parte Prima, Titolo III, Capitolo 2) follow this definition. Austria (§ 64 Sec. 1 No. 18 lit. b Bankwesengesetz) and France (Art. L511-45 Code monétaire et financier) both explicitly demand two turnover variables ("Nettozinssertrag" and "Betriebserträge"; "produit net bancaire" and "chiffre d'affaires"), whereas Sweden only specifies that a net size shall be reported (FFFS 2008:25, Chapter 7, Section 4).

- (5) As regards the number of employees on a full-time equivalent basis, Germany (BaFin, 2015), the Netherlands (Art. 3 Besluit uitvoering publicatieverplichtingen richtlijn kapitaalvereisten), Sweden (FFFS 2008:25, Chapter 7, Section 4) and the United Kingdom (Statutory Instrument 2013 No. 3118) further specify that an average number should be reported.
- (6) The exact meaning of “tax on profit or loss” is not revealed in Article 89 of the CRD IV. The EBA recommends to report taxes both on a cash basis, i.e. taxes paid, and on an accrued basis, i.e. current tax expense without deferred taxes or provisions for uncertain tax liabilities (EBA, 2014a). Luxembourg (Art. 38-3 Loi du 5 avril 1993 relative au secteur financier) and the United Kingdom (Statutory Instrument 2013 No. 3118) prescribe the disclosure of (corporation) tax paid, while the accounting tax expense shall be disclosed in Germany (BaFin, 2015) and France (Art. L511-45 Code monétaire et financier), whereby the latter further distinguishes between current and deferred tax expense. Italy refers again to the taxes as reported in the income statement, i.e. the sum of current and deferred tax expense (Circolare n. 285 del 17 dicembre 2013, Parte Prima, Titolo III, Capitolo 2).
- (7) Beyond the explicit requirements of Article 89 of the CRD IV, the EBA recommends that the published data shall be reconciled with the consolidated financial statements if possible (EBA, 2014d). In the United Kingdom, institutions are encouraged to provide additional explanations and information that might help readers to understand the report (HM Treasury, 2013a).

For the public CbCR requirement for EU financial institutions to be effective, it is essential that the reports can be considered appropriately by all addressees. The disclosure obligation is supposed to work via two main channels: First, the data shall direct tax authorities’ attention to issues that require further investigation such that abusive tax planning behavior can be detected

more efficiently. Second, public pressure should induce firms to refrain voluntarily from presumably aggressive tax sheltering and to pay taxes in proportion to real economic activity. The different ways of implementing the CbCR obligation, though, can result in reporting heterogeneity across Member States and bank groups, which can in turn impede the interpretability and the comparability of the reports. Ultimately, and notably in light of the additional direct and indirect costs that go along with the CbCR requirement (Dutt et al., 2020), the heterogeneous reporting behavior is likely to weaken the added value of CbCR. The public availability of the reports offers a unique research setting and allows to identify regulatory gaps that require further clarifications, such that the overall objective of CbCR, the increase in transparency, can be reliably achieved.

2.2 Related literature

We contribute to the literature on CbCR which is continuously growing due to the novelty of this transparency measure and the emergence of an increasing number of different CbCR concepts (see footnote 3). We differentiate between three strands of empirical literature on CbCR that can further be classified according to the different existing initiatives.⁷

First, several studies analyze in how far affected firms reacted to CbCR and adapted their tax avoidance behavior and their real economic activities. With regard to Article 89 of the CRD IV, empirical evidence on its impact on banks' overall level of tax avoidance is mixed. Overesch and Wolff (2020) find that EU-headquartered multinational banks with activities in European tax havens are particularly exposed to the new transparency measure and increase their effective tax rates after the introduction of CbCR compared to banks without tax haven operations and to different control groups not affected by the disclosure obligation. Joshi et al.

⁷ In additional, several normative studies discuss the pros and cons of CbCR, e.g. Cockfield and MacArthur (2015); Evers et al. (2017); Hanlon (2018); Dutt et al. (2020); Lagarden et al. (2020).

(2020) document a decline in income shifting by financial affiliates, but find that the magnitude of corporate tax avoidance at bank group level did not change materially. Concerning real effects, Eberhartinger et al. (2020) observe a reduction in European banks' presence in tax havens, especially in so-called Dot Havens and tax havens where financial secrecy is high. With regard to the confidential CbCR for large multinational firms established by the OECD for financial years starting on or after 1 January 2016 (OECD, 2015), Hugger (2020) and Joshi (2020) document that the effective tax rates of firms subject to the disclosure requirement increase in response to the CbCR introduction and that the extent of profit shifting declines.⁸ Hugger (2020) also observes that companies try to avoid the CbCR obligation by adjusting their revenues below the reporting threshold of EUR 750 million. De Simone and Olbert (2020) provide evidence that affected firms increase investments in tangible assets and employees in European countries with preferential tax regimes and reduce the number of subsidiaries and organizational complexity.

Second, two event studies examine the reaction of the capital market to the increase in tax transparency by CbCR. Empirical results are inconclusive and depend on the underlying CbCR initiative. Johannesen and Larsen (2016) observe a significant decrease in firm value around two key dates in the legislative process that included a CbCR requirement for large EU undertakings in the extractive industry in the EU Accounting Directive. In contrast, the findings of Dutt, Ludwig et al. (2019) suggest a zero investor response to the decision to introduce a CbCR obligation for EU financial institutions. They find some evidence that negative reactions from the anticipation of reduced tax avoidance opportunities and positive reactions from an expected decline in information asymmetries between managers and shareholders offset each other on average.

⁸ Joshi (2020) only finds a decline in profit shifting from 2018 onwards.

Third, and most closely related to our study, several authors analyze the information content of CbCR. Descriptive analyses of the publicly available CbCR data of EU financial institutions reveal the extent of banks' presence in tax havens as well as a misalignment between profits and employees in particular tax havens (Bouvatier et al., 2018; Brown et al., 2019; Dutt, Nicolay et al., 2019; Fatica & Gregori, 2020; Janský, 2020).⁹ Dutt, Nicolay et al. (2019) also show that CbCRs uncover a large amount of bank's worldwide profits and employees compared to conventional databases. In the context of the confidential CbCR of the OECD, a few papers examine aggregated CbCR data of U.S. multinational companies.¹⁰ Garcia-Bernardo et al. (2019) find that the disconnect between profits and real economic activity is higher in countries with low effective tax rates and that the country coverage of CbCR data is superior to that of other available data sources. Clausing (2020a, 2020b) estimates a large scale of profit shifting based on U.S. CbCR data. Finally, Blouin and Robinson (2020) and Horst and Curatolo (2020) discuss in how far U.S. CbCR data contains a double counting of profits which might inflate profit shifting estimates.

We complement prior literature analyzing the numerical CbCR information itself by focusing on how transparently and comprehensively the information is presented. For this purpose, we build on the dataset of CbCRs collected by Dutt, Nicolay et al. (2019) and add new variables to the key data contained therein which measure the reporting behavior of the bank groups. The way of calculating and presenting the data is essential for a consistent interpretation of the reports by its addressees. We make an important contribution by investigating which open points diminish the informative value of CbCR and impede its effectiveness and therefore require further clarifications.

⁹ Apart from academic studies, there are also studies prepared by non-governmental organizations or political groups, for instance Murphy (2015); Aubry et al. (2016); Aubry and Dauphin (2017).

¹⁰ Recently, the OECD also published a first descriptive analysis of aggregated CbCR data from 26 jurisdictions (OECD, 2020).

3 Data

Our starting point is the dataset of CbCRs collected by Dutt, Nicolay et al. (2019). The authors conduct a Python programmed Google search based on both a list of multinational, EU-headquartered bank groups derived from Bank Focus ownership data and typical expressions contained in CbCRs in several languages. They use textual analysis techniques to identify the relevant section in the downloaded PDFs that comprises the CbCR information.¹¹ For each CbCR, they manually extract the key CbCR data (profit or loss before tax, number of employees, turnover and taxes) for each reported country as well as additionally relevant information (e.g. unit, currency). Their final sample includes (unbalanced) CbCR data for 114 multinational bank groups headquartered in the EU for the years 2014-2016.¹² This dataset forms the starting point for our analyses. We aggregate the dataset at bank group-year level, since we are interested in the CbCRs as a whole, not in the distribution of the data across the different reported countries. Table 2 shows the composition of the sample of CbCRs underlying our analyses by headquarter country and year. Overall, we consider 304 reports.¹³ CbCRs of bank groups headquartered in Germany, the United Kingdom, France, Italy and Spain constitute the largest part of the sample.

In a next step, we define variables that reflect the reporting behavior in the CbCRs. They refer to the place of publication of the CbCR, the CbCR content, the readability of the tables containing the CbCR data and the list of entities that should be published together with the

¹¹ See Dutt, Nicolay et al. (2019, pp. 14–16) for a detailed description of the data collection process.

¹² The CbCR requirement was effective from 1 January 2015. Dutt, Nicolay et al. (2019) conducted the data collection process in 2017. Hence, their sample covers the financial years 2014-2016. We believe that a longer time horizon would not significantly change our inferences, since exemplary inspections reveal that, over the three years considered, banks' adjustments in presenting the CbCR data are overall only minor.

¹³ The total number of CbCRs (304) is slightly smaller than the number of bank group-years (316) indicated in Dutt, Nicolay et al. (2019). The small discrepancy stems from the different underlying research questions. Dutt, Nicolay et al. (2019) focus on the information content of the CbCR data. In case a CbCR is not available for a distinct year, but the data is contained in the CbCR of the following year, the CbCR of the following year is used to collect data for both years, such that two bank group-years are recorded. In this study, though, we are interested in the CbCR as a whole instead of the CbCR data. In the case illustrated above, we would therefore only count one CbCR.

reportable items. Columns 3 to 5 of Table 3 provide an overview of the variables included in our analyses. We differentiate between a maximum of four values per variable (i.e. 0 – 1 – 2 – 3). Most variables, though, can take two values (e.g. 0 = “no”, 1 = “yes”). The variables are constructed in such a way that a higher value implies more transparency or a better readability. This ordering is essential for the score analysis conducted in Section 4.2 since it ensures that the values of different variables can be added up. The different values that a variable can take are also indicated in the legend of each figure in Section 4.1. The order of the bars in the figures reflects an increase in transparency.¹⁴

For each CbCR, we manually code the variables along our definition. Some of the variables shown in Table 3 are derived from additional variables that are not numeric, but where we enter free text, which is subsequently converted into categories (e.g. *turn_count*, *tax_count*, *item_add_count*, *other_ctry_count_desc*).

In Section 4.2, we also consider the relation between the reporting behavior and both the share of tax havens in the total number of reported countries and the total number of employees reported in the CbCR. These variables are calculated based on the original CbCR dataset at bank group-year-country level of Dutt, Nicolay et al. (2019).

4 Analysis of European banks’ country-by-country reporting behavior

4.1 Reporting heterogeneity

In this section, we examine the reporting heterogeneity across our sample of CbCRs by conducting descriptive analyses. We focus on the place of publication of the CbCR, the CbCR content, the readability of the tables containing the CbCR data and the list of subsidiaries and

¹⁴ In Figure 1, Figure 9, Figure 11, Figure 14, Figure 16, Figure 18, Figure 19 and Figure 21, the order of the bars does not imply an increase in transparency. Instead, each bar reflects a “no” vs. “yes” decision (0 vs. 1).

branches. We also consider differences between bank groups headquartered in different countries and try to link our findings to country-specific particularities with regard to the transposition of Article 89 of the CRD IV into Member States' national laws, as described in Section 2.1.¹⁵

4.1.1. Place of publication

According to Article 89 of the CRD IV, CbCRs shall be published as an annex to the financial statements. They are regularly made available to the public either by disclosure in the annual report or as a separate document on the bank's website. Figure 1 reveals that most bank groups (77.30%) publish the CbCR as part of the annual report. Among those CbCRs that are published in the annual report, about one third (33.19%) are included in a separate chapter, i.e. the section containing the CbCR is listed in the table of contents of the annual report. However, there is a wide variety among the headquarter countries in our sample, with Italian bank groups exhibiting the highest share of CbCRs contained in a separate chapter (82.61%). Given the often extensive length of the annual report, information as to where to find the CbCR among the other financial and non-financial information provided in the annual report facilitates finding the data. For three quarter (75.66%) of the CbCRs, the annual report constitutes the only place of publication (see Figure 2). A quarter (24.34%) of the reports, in contrast, are published in a separate document, whereby rarely, both publication places are used in parallel. Bank groups from the United Kingdom have a slight preference for the publication of the CbCR in a separate document (62.50%); a few CbCRs are published as part of a larger tax report which includes additional information on the overall tax strategy of the group. A separate document is also common in Italy (41.03%) and Germany (35.71%). Article 89 of the CRD IV prescribes that

¹⁵ We only draw inferences on headquarter countries for which at least 15 CbCRs are included in our sample.

the CbCR data shall be audited. In case the CbCR is published in an own document, only some of these include a separate statement of the auditor.

4.1.2. *CbCR content*

In this section, we consider what information is provided in the report beyond the mere numbers. We take both qualitative and quantitative information into account, such as additional explanations on the calculation of the data or the inclusion of supplementary items that go beyond the requirements of the CRD IV.

As displayed in Figure 3, more than half of the CbCRs (56.58%) include the literal expression of “CbCR” or equivalent terms, which helps to find the report. In Spain, Article 87 of Law 10/2014 specifies that the CbCR shall be called “informe bancario anual” (annual banking report), which is consistent with our observations.¹⁶ While 23.36% of the reports provide no explanation on the legal basis of the CbCR, 28.62% (9.21%) refer to the national legal rules (the CRD IV) (see Figure 4). In 38.82% of the cases, a reference to both national law and the CRD IV is provided, which is particularly common in Spain and Germany. Again, such a reference supports the reader of the document in identifying the CbCR data.

The CbCR should be prepared on a “consolidated basis”, which could relate to either the accounting or the (usually narrower) prudential consolidation scope (EBA, 2014d). Figure 5 shows that the vast majority of the CbCRs (80.26%) contain no information on the underlying scope of consolidation. 3.29% (only CbCRs from France) state that “consolidated entities” are included, without providing further details. Since the CbCR is regularly part of the annual report (see above), this statement presumably refers to the consolidation scope of the applicable

¹⁶ However, we do not consider the expression „informe bancario anual“ as synonym for „CbCR“ since it is not specific enough to find the CbCR data without knowledge of the Spanish regulation. A term which we treat equivalently to “CbCR” is for instance the German term “länderspezifische Berichterstattung” (country-specific reporting).

accounting standards. This understanding is also consistent with the provisions of Article L511-45 of the “Code monétaire et financier” in France. 2.30% of the CbCRs (only from Germany) state to use the prudential consolidation scope, whereas an explicit reference to the accounting consolidation scope is made in 14.14% of the cases. Germany exhibits by far the highest transparency (only 25% of the reports provide no information). With almost two third (64.29%) relying on the accounting consolidation scope, the majority of the German bank groups are in line with the guidelines of the BaFin (BaFin, 2015).

Article 89 of the CRD IV does not specify which data source should be used for the calculation of the reportable items and in how far profits from intra-group transactions should be eliminated. Both single and consolidated financial statements are conceivable data sources. These alternatives contain important differences. If consolidated financial statements are used, consolidated profits/ losses and turnover must be allocated to different countries. The sum of the country profits reported in the CbCR should thus correspond to the total profit at group level reported in the consolidated financial statements (Evers & Hundsdoerfer, 2014, p. 12). Such an apportionment, though, is arbitrary since total profits are affected by synergy effects as well as by non-feasible internal and external factors and therefore cannot be allocated to distinct locations based on simple key figures (Evers & Hundsdoerfer, 2014, pp. 12–13, 23). If, in contrast, single financial statements are considered, the profits/ losses and turnover of the group’s entities would just have to be added up by country. In consolidated financial statements, income and expenses from intra-group transactions are netted out, such that the overall profit remains unaffected (Evers et al., 2017, p. 7). However, taxes are regularly determined on the basis of single financial statements including profits from intra-groups transactions. Thus, the link between reported profits and taxes per country is likely to be distorted and offers room for misinterpretations (Evers & Hundsdoerfer, 2014, p. 12; Grotherr, 2016, p. 711). In addition, profit shifting by means of transfer pricing or intra-group financing is not visible (Evers et al.,

2017, p. 7). By contrast, single financial statements contain profits from intra-group transactions. Still, they would at best provide rough indications for profit shifting because the by-country data does not provide details on the intercompany transactions, such as on their source or direction (Evers et al., 2017, p. 7). Although reported profits and taxes per country match better than on the basis of consolidated financial statements (Grotherr, 2016, p. 711), discrepancies between financial and tax accounting can also result in a misleading picture (Evers et al., 2017, p. 7). Lastly, single financial statements are regularly based on local Generally Accepted Accounting Principles (GAAP) which might differ between jurisdictions, thus impeding the cross-country comparability of the data (Grotherr, 2016, p. 712; Evers et al., 2017, p. 7). For consolidated financial statements, International Financial Reporting Standards (IFRS) are becoming more and more common, but discrepancies between CbCRs prepared by different groups might arise as well unless all countries oblige firms to rely exclusively on IFRS (Spengel et al., 2019, p. 579). Still, at least within the same CbCR, the data is better comparable across reported countries.

Figure 6 shows that information on the underlying data source is mostly missing in the CbCRs. The data source used for the by-country calculation of turnover is more often revealed (35.20% of the CbCRs) than for the determination of profit or loss before tax (21.62% of the cases). A potential reason is that the notion of turnover itself requires further explanations as it is not naturally part of the financial statements of financial institutions (see section below). German and Spanish bank groups exhibit the highest transparency. From those bank groups that provide additional information on the underlying data source, the majority claim to prepare the CbCR on the same basis as the consolidated financial statements. Most bank groups also remain intransparent on how they treat intra-group transactions (see Figure 7). German bank groups are the most transparent, with a clear preference for no elimination of intra-group transactions (49.09% for profit before tax, 69.64% for turnover), thereby following the

recommendation of the BaFin to report the data on a gross basis (BaFin, 2015). We rarely observe the elimination of all intra-group transactions in Italy, the United Kingdom and Germany. An elimination of transactions between entities in the same country while preserving cross-border intra-group transactions (EBA, 2014c) is explicitly made by a small portion of bank groups headquartered in the United Kingdom and Germany. A direct comparison of Figure 6 and Figure 7 reveals that caution should be warranted when taking the statements in the reports literally: While consolidated financial statements are the preferred source of data, no elimination is the most favored treatment of intra-group transactions, which constitutes a contradiction (see description above). Hence, statements such as “the data is prepared on the same basis as the consolidated financial statements” do not imply an exact equaling of the data from the CbCR and the consolidated financial statements because additional adjustments might have been made when splitting the overall result to individual countries. The EBA recommends that the CbCR data shall be reconciled with the consolidated financial statements (EBA, 2014d). Only few CbCRs state that the CbCR data and the consolidated financial statements data are compatible (3.04%) respectively not compatible (2.03%) (see Figure 8). A fifth (22.30%) of the CbCRs in our sample contain a quantification of the differences between the two types of information disclosed. Especially bank groups headquartered in Sweden, the United Kingdom and Italy prepare such a reconciliation. Some bank groups provide additional explanations on the origin of the difference between the sum of the country profits in the CbCR and the overall profit in the consolidated financial statements. Common reasons are adjustments with respect to intra-group transactions and dividend payments.¹⁷

¹⁷ Since dividend distributions are not deductible from income, the inclusion of received intra-group dividends in the reported profit before tax results in a double counting of the dividend income. In particular with respect to jurisdictions where holding companies are located, a distorted picture on the amount of profits before tax might thus arise (Spengel et al., 2019, p. 580). See also Horst and Curatolo (2020) and Blouin and Robinson (2020) for a discussion of this double counting problem with respect to aggregate CbCR data of U.S. multinationals. As regards the CbCR requirement set out in Action 13 of the OECD’s Action Plan on Base Erosion and Profit Shifting (BEPS) (OECD, 2015), the OECD has recently clarified that dividend payments received from other group

The notion of “turnover” is not naturally part of the financial statements of financial institutions. The EBA clarifies that this item shall be in line with the institution’s financial statements and interpreted for instance as total net banking income, defined as “total net income before impairment and operating expenses, but including net interest income, net fees and commissions income, net trading income and other operating income” (EBA, 2014e). We observe a wide variety of different expressions for reporting the “turnover” item, which are displayed in Figure 9. Almost half of the bank groups (48.36%) employ literally the notion of “turnover” (notwithstanding differences in language and spelling). Other expressions that regularly appear (between 6.25% and 13.49% of the cases) are “(total) operating income”, “(sales/ net) revenue(s)”, “(total/ gross) income/ margin”, “net banking income”, “business volume” and “net interest income” (see the notes to Figure 9 for variants in different languages and spelling). In Austria, § 64 Sec. 1 No. 18 lit. b Bankwesengesetz goes beyond the requirements of the CRD IV and prescribes the reporting of two different turnover items, namely “Nettozinsertag” (net interest income) and “Betriebserträge” (operating income). In France, Article L511-45 of the “Code monétaire et financier” demands two turnover variables as well, i.e. “produit net bancaire” (net banking income) and “chiffre d'affaires” (turnover). Indeed, we observe that 82.35% of the Austrian and 17.95% of the French bank groups in our sample report two different turnover variables (see Figure 10). A few bank groups in Sweden even disclose three or more turnover items. The expression used for turnover is often not concrete enough to gain a thorough understanding of what is actually measured by this variable, in particular if the notion “turnover” itself is employed. More than half of the CbCRs (57.57%) provide therefore additional explanations on the composition of the reported turnover item(s), for instance which sub-items are included in the variable (see Figure 11). Transparency is highest in Germany and Spain and lowest in the Netherlands, France and Austria. Still,

members should be excluded from profit or loss before tax (OECD, 2019b, p. 13). Article 89 of the CRD IV, though, does not prescribe how intra-group dividends should be treated.

additional definitions are dispensable if the turnover expression is sufficiently precise, as it is regularly the case in Austria and France, for instance.

Article 89 of the CRD IV specifies that the number of employees shall be reported on a full-time equivalent basis, without providing more detailed instructions on the exact calculation. The lack of clear guidelines results in reporting heterogeneity with regard to two main aspects. First, the number of employees could either be calculated as an average over time or at a specific point in time, i.e. at year-end or at the reporting date. Depending on the magnitude of staff fluctuations during the year, these alternatives can give rise to substantially different reported numbers. As displayed in Figure 12, almost half of the CbCRs in our sample (46.38%) contain no additional information on the point in time to which the reported employee figure refers. Bank groups headquartered in Italy are the least transparent, with only 12.82% specifying the way of calculation. Transparency is highest in the United Kingdom, Sweden, the Netherlands and Spain. Among those bank groups that provide explanations, about two third (35.53% of all reports) report an average over time, whereas about one third (17.76% of all reports) consider the number of employees at a specific point in time; only a minority of bank groups from the United Kingdom report both. Germany, the Netherlands, Sweden and the United Kingdom have laws or guidelines in place that ask for an average number, which is consistent with our observations. Second, there is uncertainty as to in how far particular worker groups should be considered, for instance sub-contractors, interns, apprentices or employees on parental leave. 15.46% of the CbCRs include more specific explanations on the calculation of the number of employees that go beyond information on the point in time (average vs. specific point), such as the inclusion or exclusion of certain worker groups (see Figure 11). Italy is the country with the highest share of bank groups providing additional explanations, followed by Germany and the United Kingdom.

Article 89 of the CRD IV does not prescribe how “tax on profit or loss” should be defined, which leaves room for interpretation. The EBA recommends to report taxes both on a cash basis, i.e. taxes paid, and on an accrued basis, i.e. current tax expense without deferred taxes or provisions for uncertain tax liabilities (EBA, 2014a). Several Member States, however, prescribe the reporting of one or the other tax variable. As such, Luxembourg and the United Kingdom demand the disclosure of (corporation) tax paid, while the accounting tax expense shall be disclosed in Germany, Italy and France, whereby the latter further distinguishes between current and deferred tax expense. Depending on the reported tax variable, different considerations have to be made when interpreting the CbCR data. Taxes paid also include payments for past or future periods and withholding taxes paid by other group members and therefore do not adequately reflect the country-specific tax burden in a certain year. In this regard, income tax accrued, excluding deferred taxes, would be a more suitable measure (Grotherr, 2016, p. 713). However, due to differences between financial and tax accounting, the tax base often differs temporarily or permanently from the profit in the financial statements. Hence, the link between profits and taxes reported in the CbCR would again be distorted (Grotherr, 2016, p. 713). If, in contrast, the sum of current and deferred tax expense is disclosed – without a further split into its components – reported profits and taxes would match better, but no information would be provided on the amount of tax that actually accrued in the respective year. The conflict between the advantages and drawbacks of different tax variables could be partly solved by reporting several variables. However, the vast majority of the CbCRs in our sample (80.26%) report exactly one tax item (see Figure 13). The reporting of two or three tax variables is particularly common in France, which is in line with Article L511-45 of the “Code monétaire et financier” requiring a distinction between current and deferred taxes. A few bank groups, mainly in Spain and Italy, only report turnover and employees, thus not fully complying with the requirements of the CRD IV. Some bank groups in the United Kingdom, in

contrast, even report four or more tax variables on a voluntary basis; for instance, they also disclose value added taxes, payroll taxes or bank levy paid. Figure 14 displays the relative frequencies of different tax variables included in the CbCR. Almost half of the CbCRs in our sample (48.99%) report at least one tax item of which the exact meaning is unclear, i.e. just labelled “taxes” or similar. 24.66% of the CbCRs include the sum of current and deferred tax expense. 19.26% of the CbCRs report tax paid, which is only common in the United Kingdom, Spain, Austria and Sweden. 16.55% and 9.80% of the reports contain data on current tax expense and deferred tax expense, respectively, whereby the latter is only observable in France and Belgium. The highest transparency on the definition of the tax variables can be found in the United Kingdom and France, followed by Sweden and Germany. In line with the national provisions, bank groups headquartered in the United Kingdom consistently report tax paid, whereas French bank groups predominantly disclose both current and deferred tax expense. Bank groups headquartered in Sweden and Germany have a clear preference for the accounting tax expense, i.e. the sum of current and deferred taxes.

Apart from explanations on the composition of particular variables, such as turnover and the number of employees, some CbCRs also provide explanations that help to interpret the CbCR data. Almost a fifth (18.09%) of the CbCRs in our sample contain additional explanations on for instance extraordinarily high or low numbers or on the relation between different reported items (see Figure 11). In the United Kingdom, the guidelines on the Capital Requirements Regulations 2013 (Statutory Instrument 2013 No. 3118) which implement Article 89 of the CRD IV into national law encourage institutions to provide additional explanations and information on a voluntary basis (HM Treasury, 2013a). Indeed, slightly more than half of the bank groups headquartered in the United Kingdom (52.50%) follow this recommendation and include clarifications in their CbCR. Such qualitative information can be very valuable because it can help to prevent misinterpretations. The uninformed reader might be inclined to simply

compare reported taxes, profits, turnover and employees and thus draw potentially wrong conclusions. A low effective tax rate in terms of reported taxes over reported profits, however, is not necessarily driven by aggressive tax planning, but could also result from the utilization of existing loss carry-forwards. Similarly, a particularly low profit before tax could arise from a special amortization instead of book profit shifting activities (Deutscher Steuerberater-Verband e.V., 2016, p. 3). The provision of additional narrative information can assist the reader in interpreting the data. Still, it remains questionable in how far it is actually considered by the addressees of the CbCR besides the actual numbers (Dutt et al., 2020, p. 20).

The list of variables on which financial institutions have to disclose by-country data according to Article 89 of the CRD IV is very limited (see Section 2.1). Financial institutions could substantially increase the informative value of their reports by voluntarily publishing data on further variables. Figure 15 shows that 7.24% of the CbCRs contain by-country data on additional items that are not required by Article 89 of the CRD IV, such as net profit, total assets, depreciation, certain expenses or other asset, profit, liability and equity figures (see the notes to Figure 16 for further examples). The only headquarter countries where the reporting of supplementary items is common, though, are Sweden, the Netherlands and Denmark.

According to Article 89 of the CRD IV, the CbCR data shall be published “by Member State and by third country in which it [the institution] has an establishment”. However, some bank groups pool several countries into a single entry (in the following denoted as “collective country”). A fifth (21.38%) of the CbCRs in our sample contain at least one collective country (see Figure 17). Still, there is a wide variety among headquarter countries, with the highest share of CbCRs including collective countries observable in Sweden (53.33%) and the lowest share observable in Italy (0%). In France, 5.13% of the CbCRs even report three or more collective countries, whereas the vast majority does not include any such item. Collective countries are mostly summarized under the expression “Rest of the world” and rarely under

more specific terms, e.g. “Channel Islands”, “Other EU countries”, “Asia”, “North America” or “Other non-EU countries” (see Figure 18). The pooling of several countries comes at the cost of transparency. However, the relative importance of collective countries in terms of the number of employees and profit before tax is in most cases negligible.¹⁸ Bank groups thus do not seem to hide their activities in particular countries behind low transparency. Instead, a potential reason for the pooling could be that the costs of calculating the data by country would outweigh the benefits of disclosing more detailed information. In addition, considerations on the confidentiality of the data might play a role.

There are two simple measures to increase transparency in the CbCRs, as displayed in Figure 19. The first is the inclusion of totals for the items, which allows for a better assessment of the relative importance of single countries. About two third (68.42%) of the CbCRs include item sums across the reported countries. Interestingly, CbCRs of German-based bank groups, which perform well in most other dimensions, contain item sums by far the least often. The second measure is the reporting of previous-year data. Especially in case of one-time events, like a special amortization, the use of a loss carry-forward or restructurings, the comparison with data from the previous year can be helpful to the addressees of the CbCR. Previous-year data is only included in less than a third (29.28%) of the reports.

4.1.3. Readability of the CbCR data tables

The way the CbCR data is structured and presented can support the reader of the report in processing the information. Generally, there are no guidelines as regards the design and structure of the tables which contain the by-country data, such that institutions are free to choose

¹⁸ We calculate the relative importance as the share of the number of employees (profit/ loss before tax) reported in collective countries in the total number of employees (profit/ loss before tax). Our calculations are based on the original CbCR dataset at bank group-year-country level of Dutt, Nicolay et al. (2019). The average share per bank group across the years 2014-2016 ranges from 0% to 4.21% (with only one outlier at 28.15%) in terms of the number of employees and from 0% to 8.09% (with only one outlier at 14.24%) in terms of profit/ loss before tax.

their preferred style. We examine the readability of the CbCR data tables along several dimensions.

First, as illustrated in Figure 20, there are different ways to sort the jurisdictions on which CbCR data is reported. Especially if the group is active in many countries, a sophisticated order can guide the reader through the report and helps to find a particular information. Countries are mostly (68.00%) sorted by size or importance in terms of at least one of the reportable items, such that for instance countries with many employees or a high profit before tax or turnover rank first. The primary sorting criterion employed in the remaining CbCRs is either by region/continent or alphabetic, whereby the latter is particularly common in France and Austria.

Next, we evaluate the reader-friendliness of the tables containing the CbCR data. Figure 21 shows the share of CbCRs that contain certain measures in order to improve the readability of the CbCR data tables. Most bank groups align numbers to the decimal point (91.69% of the reports), use monospaced numbers (85.71%) and separate thousands by comma or dot (84.39%), which facilitates the processing of the numerical information. A mixed picture arises regarding the indication of negative values. Particularly bank groups headquartered in the United Kingdom use brackets instead of a minus sign when indicating negative profit, turnover or tax figures, which is less intuitive. With regard to the structure of the tables, the majority of CbCRs (79.40%) arrange countries in rows and items in columns. In particular if many countries are reported, this structure is clearer and makes it easier to compare items and countries. We also consider whether additional measures are implemented to improve the readability of the data tables, for instance by using a specific layout or design or by grouping certain countries for a better overview. Especially CbCRs from bank groups in Spain and Italy offer room for improvement in this regard. Only two institutions in our sample (headquartered in France and the United Kingdom) additionally provide a visualization of the CbCR data, such as bar charts.

4.1.4. List of subsidiaries and branches

Article 89 of the CRD IV prescribes that the name, nature of activities and geographical location of the group's entities are published together with the CbCR data. While 61.84% of the CbCRs contain such an entity list, the remaining reports only refer to the list of shareholdings in the annual report or even provide no details in the CbCR as to where to find the required information (see Figure 22). German-based bank groups exhibit the highest transparency, with the majority of CbCRs containing an own entity list. In contrast, transparency is lowest in Sweden and Spain. Among those CbCRs that publish the list of entities as part of the CbCR, about one third (29.85%) first present the entity list, followed by the CbCR core data, whereas about two third (70.15%) first present the CbCR core data, followed by the entity list, or combine both parts (see Figure 23). We rank the second alternative higher as the numerical CbCR data, which is presumably of higher interest for most of the readers of the report, is placed more prominently. Bank groups headquartered in the Netherlands, Spain and Sweden consistently choose this ordering. Slightly more than half (54.37%) of the entity lists in the CbCR contain both subsidiaries and branches; for Spanish and Swedish institutions, the share is highest at 100% (see Figure 24). In 28.64% of the cases, it remains unclear whether branches are included or not. Entities are mostly sorted by country or region, which is helpful for understanding which activities are behind the CbCR data (see Figure 25).

4.2 Transparency scores

In Section 4.1, we have analyzed the reporting heterogeneity in our sample of CbCRs for distinct variables. In this section, we aggregate single variables to transparency scores in order to identify bank groups and headquarter countries that are particularly (in-)transparent in certain dimensions. Our variables are defined in such a way that a higher value implies more

transparency or a better readability (see Section 3).¹⁹ Therefore, we can add up the values of different variables in order to achieve an overall figure which reflects the degree of transparency across several variables. We construct three different transparency scores: The *content score* reflects the degree of transparency across the variables that relate to the CbCR content, i.e. the provision of additional information that helps to interpret the CbCR data as well as the way of calculation of the reportable items in light of the lack of clear guidelines. The *readability score* relates to the way the CbCR data tables are structured and presented. The *overall score* is composed of the content score and of the readability score and also takes into consideration the place of publication of both the CbCR and the list of entities. Table 3 provides an overview of the variables that are included in each transparency score. The scores are normalized to 100, whereby a score of 100 (0) indicates the highest (lowest) possible degree of transparency. In the following, we consider both the average score per headquarter country and the average score per bank group. The average score per headquarter country is calculated across all available CbCRs published by bank groups headquartered in the respective country.²⁰ The average score per bank group is calculated across the CbCRs published by the respective bank group over the years 2014-2016.

Figure 26 and Figure 27 show the average content score and readability score per headquarter country. CbCRs published by bank groups headquartered in the United Kingdom and Germany achieve on average the highest scores with respect to the CbCR content (41.35 and 38.91 points, respectively), whereas CbCRs published by bank groups headquartered in Austria and the Netherlands rank lowest (23.04 and 25.21 points, respectively). The readability of the CbCR data tables is best for German bank groups (72.45 points) and worst for Italian

¹⁹ The different values that a variable can take are indicated in the last column of Table 3.

²⁰ We only consider headquarter countries for which at least 15 CbCRs are included in our sample.

bank groups (60.52 points); however, the variation among the headquarter countries is very low.

Across all dimensions considered, the CbCRs published by bank groups from the United Kingdom and Germany are the most transparent and readable (44.75 and 44.43 points, respectively), whereas Austrian bank groups achieve on average the lowest overall scores (29.95 points) (see Figure 28). Figure 29 shows the distribution of the overall score in each considered headquarter country (i.e. including the median, the 25th percentile, the 75th percentile as well as the lower and upper adjacent values). Especially in countries for which the number of observations in our sample is comparatively high (i.e. Germany, the United Kingdom, France, Italy and Spain, see Table 2), we observe a large heterogeneity among the CbCRs. At bank group level, the ranking on the overall score is led by a bank group headquartered in the United Kingdom (58.33 points); a French bank group occupies the bottom of the ranking (22.78 points) (see Figure 30). Still, even for those bank groups that perform best in our analyses, the reporting behavior leaves room for improvements (e.g. CbCRs from bank groups in the United Kingdom achieve on average an overall score of 44.75 of the maximum 100 points, with the leading British bank group achieving 58.33 out of 100 points).

The degree of transparency in the CbCR affects the interpretability of the report. A transparent and comprehensive CbCR can help the reader to gather all relevant information and to draw the right conclusions on the group's activities. Certain bank groups, however, might be inclined to hide their activities behind low transparency in order to avoid potentially negative consequences from the disclosure, such as reputational damages, competitive disadvantages or a higher risk to be audited. Especially bank groups with a high tax haven intensity and large bank groups might be prone to such strategic considerations for the following reasons. First, tax avoidance strategies regularly include the use of jurisdictions that have low tax rates or favorable tax regimes in place. A high share of tax havens in the CbCR is thus likely to attract

the attention of the public and of tax authorities. Second, large bank groups have generally more opportunities for profit shifting than smaller groups. Again, their CbCRs could be more in the focus of different stakeholders than the CbCRs disclosed by smaller groups. On the other hand, though, these two types of bank groups might as well be incentivized to prepare CbCRs which are particularly transparent in order to avoid possibly wrong conclusions.

We analyze the relationship between the reporting behavior and both the size of the bank group and the intensity of tax haven usage by conducting correlation analyses. We measure the size of the group in terms of the total number of employees reported in the CbCR. The intensity of tax haven usage is defined as the share of tax havens in the total number of reported countries, excluding the headquarter country. We calculate these variables based on the original CbCR dataset at bank group-year-country level of Dutt, Nicolay et al. (2019). Table 4 shows the pairwise correlation coefficients between the transparency scores, the total number of employees and the share of reported tax havens. We find positive correlation coefficients (0.207% and 0.194%, respectively) between the overall transparency score and both the total number of employees and the share of reported tax havens, which are significant at the 1% level. This finding provides evidence that large bank groups and bank groups with a high tax haven intensity do not hide their tax haven activities behind low transparency, as conjectured above, but proactively disclose their activities in a transparent CbCR. This effect mainly stems from the provision of additional information on the CbCR data and from the manner of calculation of the reportable items (i.e. the content score), whereas the readability of the tables containing the data (i.e. the readability score) is only marginally related to the size of the bank group and the share of tax havens.

Overall, our descriptive analysis reveals that the lack of clear and uniform guidelines as regards Article 89 of the CRD IV results in a large heterogeneity in the CbC reporting behavior across different bank groups and headquarter countries, which in turn impedes the

comparability of the reports and increases the risk of misinterpretations by the public and by tax authorities. Given the high direct and indirect costs that go along with the public disclosure of by-country data (Dutt et al., 2020), it is essential to ensure that the way of calculating and presenting the required information does not reduce the added value of CbCR.

5 Development of a best practice approach on country-by-country reporting

The imprecise formulations of Article 89 of the CRD IV and the transposing national tax laws allow the reporting banks to choose the options that fits their needs best, thus reducing their compliance burden (PricewaterhouseCoopers, 2014a, p. 4). This flexibility, though, comes at the cost of transparency. Ultimately, the heterogeneous reporting behavior identified in Section 4 runs counter to the primary objective of public CbCR, which should enable the society to assess whether the taxes paid in the different jurisdictions reflect real economic activity appropriately. In this section, we develop policy recommendations in order to improve the interpretability and the readability of CbCRs published by financial institutions. In particular, we suggest guidelines that help to ensure a consistent interpretation of the reports across different bank groups and countries, thus increasing the information content of CbCR. Our considerations are especially relevant with regard to the ongoing discussion on the introduction of a public CbCR for all large multinational firms in the EU (European Commission, 2016; European Parliament, 2019; Council of the EU, 2019). Unambiguous instructions at EU-level are necessary in order to guarantee that the rules are implemented consistently by all Member States and that as few points as possible are open to interpretation by the reporting firms. As we derive our recommendations from the inconsistencies in reporting identified in Section 4, we refer primarily to the CbCR established in Article 89 of the CRD IV. However, many

considerations are generalizable to other CbCR initiatives and proposals. We suggest the following best practice approach on CbCR.

CbCRs shall be accessible via the banks' websites, either in form of a separate document or as part of the annual report. In case the CbCR is published in the annual report, the table of contents should include the chapter containing the CbCR in order to facilitate finding the CbCR data among the other financial and non-financial information in the annual report. We further recommend the use of a clear and unified title, e.g. "Country-by-Country Reporting".

The CbCR should relate to the consolidation scope of the applicable accounting standards, which is regularly broader than the prudential scope of consolidation and allows for a better comparison to the consolidated financial statements. Similarly, the CbCR should be based on the same accounting standards (e.g. IFRS or local GAAP) as the financial statements (PricewaterhouseCoopers, 2014a, p. 24).

A specification of the data source on which the calculation of profit or loss before tax and turnover is based is indispensable in order to ensure the comparability of the data across different CbCRs and to provide a picture on the group's activities which is as accurate and informative as possible. As shown in Section 4.1.2, both consolidated and single financial statements exhibit certain drawbacks. A potential and feasible compromise would be to eliminate intra-group transactions between entities in the same country while preserving cross-border intra-group transactions (PricewaterhouseCoopers, 2014a, p. 12). This approach should be complemented by reconciliation adjustments that quantify the differences between the sum of the country profits (turnover) in the CbCR and the group profit (turnover) in the consolidated financial statements (PricewaterhouseCoopers, 2014a, p. 17). However, despite all attempts to standardize the CbCR rules, there will be no full comparability of the data across countries as long as accounting standards are not harmonized. A more far-reaching approach would

therefore be the set-up and definition of harmonized rules with respect to the determination of income (Evers et al., 2017, p. 8).

For a common understanding of the reportable items, it is necessary to establish uniform definitions. Ideally, they should be complemented by detailed guidelines on the exact way of calculation and should not offer leeway to the firms. The definition of turnover could follow the recommendation of the EBA, which stipulates that this item shall be consistent with that in the institution's financial statements. For credit institutions, for instance, the EBA considers total net banking income, i.e. "total net income before impairment and operating expenses, but including net interest income, net fees and commissions income, net trading income and other operating income" as an appropriate measure (EBA, 2014e). The number of employees should be calculated as the average over the financial year covered in the CbCR, not at year-end. Otherwise, one-time events like restructurings could distort the relation between the number of employees and the other items reported in the CbCR that relate to the whole year. In addition, the manner in which particular worker groups, such as sub-contractors, interns, apprentices or employees on parental leave, should be considered must be stipulated. Alternatively, bank groups should be obliged to provide an explanation on the underlying way of calculation. As regards tax on profit or loss, we recommend to report both current and deferred tax expense. In contrast to taxes paid, including payments for past or future years, current taxes adequately reflect the country-specific tax burden in a certain year and, in combination with deferred taxes, allow for a better comparison to reported profits before tax.

The pooling of several countries to a single entry, e.g. "Rest of the world", is likely to reduce transparency and should generally not be allowed. A conceivable exception is the case where the CbCR data allows to draw conclusions on the profitability of single subsidiaries and thus risks to distort competition. Similarly, a pooling might be reasonable if the costs of calculating the data by country would outweigh the benefits of disclosing more detailed

information. The possibility to pool countries could be tied to thresholds in terms of the size of the reported items, such that only data on jurisdictions where the group's activities are of minor importance is aggregated. In any case, the group should specify which countries are pooled.

We further suggest to provide additional narrative explanations that help to interpret the CbCR data, such as on extraordinarily high or low numbers or on obvious disconnects between profit before tax, taxes or employees (PricewaterhouseCoopers, 2014a, p. 17). The provision of totals for the items conveys a better idea of the relative importance of single countries and is therefore also recommendable. Ideally, all bank groups should use a uniform template for reporting – similar to the model template of the OECD with regard to the confidential reporting by large multinational firms vis-à-vis the tax authorities (OECD, 2015, pp. 29–30) –, thus facilitating comparisons across bank groups. Above all, countries should be arranged in rows and items in columns. Bank groups should align numbers to the decimal point, use monospaced numbers and separate thousands by comma or dot. A sophisticated layout and design of the data tables can improve the reader-friendliness further. The publication of the CbCR in PDF format could be complemented by an interactive online tool on the banks' websites and by an XML or CSV spreadsheet, thereby helping the reader to process the information. The list of entities should include both subsidiaries and branches and be placed immediately before or after the CbCR data.

Prior literature reveals that the informative value of CbCR could further be strengthened by including additional variables that reflect economic activity, such as total assets and staff cost (Dutt, Nicolay et al., 2019). In addition, the reporting of specific indicators, for instance intra-group license payments, would shed light on the importance of particular profit shifting channels (Steinegger, 2016, p. 458). So far, financial institutions can provide by-country data on supplementary variables on a voluntary basis only. In this regard, the mandatory disclosure of additional items is worth considering.

Finally, whenever a certain provision is open to various interpretations, the reporting institutions should explain which option they have chosen or, if feasible and economically rational, provide the required information in several ways. Still, the trade-off between high transparency and low compliance costs needs to be considered.

6 Conclusion

The public CbCR requirement for EU financial institutions is supposed to allow the tax authorities and the general public to better assess whether banks are paying their “fair share of taxes” on their worldwide activities. However, the lack of clear and uniform definitions and guidelines arises in different ways of interpreting the provisions of Article 89 of the CRD IV. Generally, Member States’ national laws do not close these regulatory loopholes and offer leeway to the reporting firms. Consequently, the way of preparing and presenting the required information differs widely across bank groups, which impedes the interpretability and the comparability of the reports. Ultimately, the inconsistent and heterogeneous reporting behavior is likely to diminish the informative value of CbCR.

Based on a sample of CbCRs published by EU-headquartered multinational bank groups for financial years 2014-2016, we define and manually code variables that reflect the reporting behavior and the degree of transparency in the reports. We analyze how transparently and comprehensively the information is presented across different CbCRs and headquarter countries and which open points inhibit the interpretability and the readability of the data. Finally, we derive recommendations in order to increase the information content of CbCR.

Our descriptive analysis reveals a heterogeneous reporting behavior across bank groups in terms of the place of publication of the report (e.g. annual report vs. separate document), its content – such as the underlying data source (e.g. single vs. consolidated financial statements

and treatment of intra-group transactions), applied definitions (e.g. consolidated basis, turnover, number of employees and tax on profit or loss) and the provision of additional information (e.g. explanations, additional items, item totals and previous-year data) –, the readability of the data tables (e.g. table structure and design) and the list of entities that should be published together with the by-country data (e.g. inclusion in CbCR and consideration of branches). We aggregate single variables to transparency scores and identify bank groups and headquarter countries that are particularly (in-)transparent in certain dimensions. We find that CbCRs published by bank groups from the United Kingdom and Germany are the most transparent and readable, whereas the Austrian bank groups in our sample achieve on average the lowest overall scores. We also observe that large bank groups and bank groups with a high share of tax havens prepare CbCRs which are comparatively transparent. In order to ensure a consistent interpretation of the reports, we recommend to specify the underlying data source and the applicable consolidation scope and to establish uniform definitions of the reportable items which should apply to all groups preparing a report. A standardized template, comparable to the model template of the OECD (OECD, 2015, pp. 29–30), would further help to process the information and would allow for better comparisons across bank groups.

Our findings are relevant for researchers, policymakers and the addressees of public CbCR, notably tax authorities and the general public. We make an important contribution by showing which considerations should be made when analyzing and interpreting CbCR data. The lack of standardized rules becomes especially noticeable when several reports prepared by different bank groups are considered simultaneously. Thus, empirical analyses of the CbCR data would substantially gain in meaningfulness if a uniform CbCR approach was adopted as the comparability of the underlying data would considerably improve. Our analyses are particularly important in view of the current CbCR proposal for large EU multinationals which is still under discussion (European Commission, 2016; European Parliament, 2019; Council of the EU,

2019). Given the high direct and indirect costs that go along with the disclosure requirement (Dutt et al., 2020), it has to be ensured that different ways of calculating and presenting the information do not weaken the added value of CbCR. Since the data shall be disclosed publicly, the prevention of misinterpretations becomes even more a concern than in case of a purely confidential CbCR vis-à-vis the tax authorities. Therefore, clear guidelines for preparing the reports are essential for an appropriate consideration of the data by all addressees.

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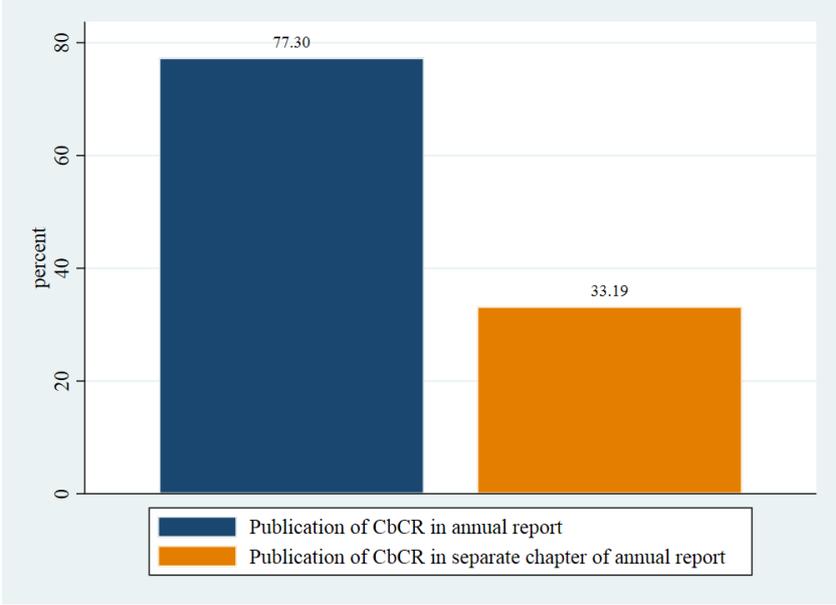
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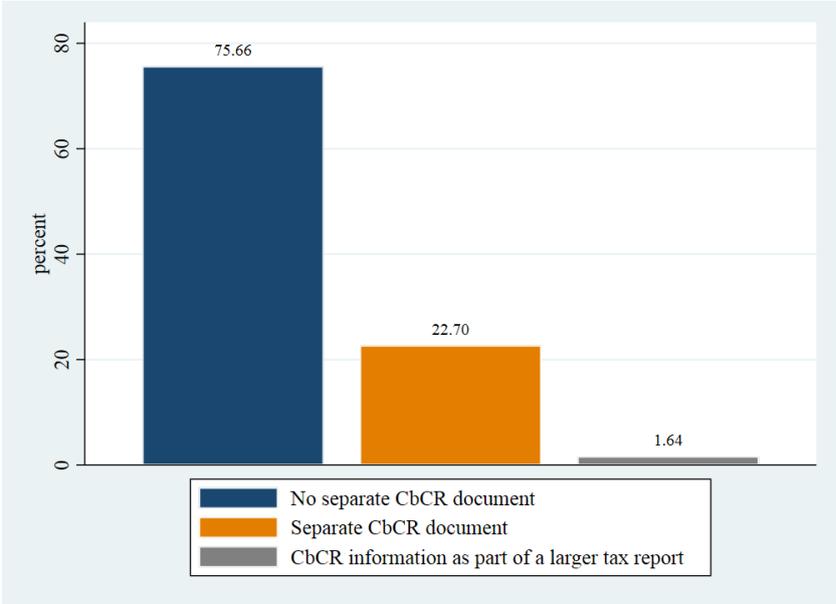
Figures

Figure 1: Publication of CbCR in (separate chapter of) annual report



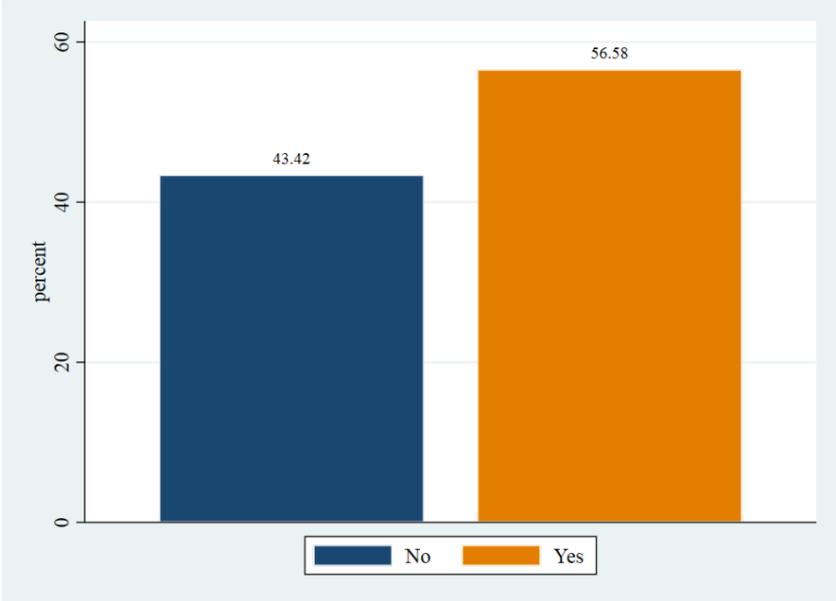
Notes: The graph shows the share of CbCRs that are published in the annual report (“Publication of CbCR in annual report”) and, for those CbCRs that are published in the annual report, the share of CbCRs that are contained in a separate chapter of the annual report, i.e. the CbCR is included in the table of contents of the annual report (“Publication of CbCR in separate chapter of annual report”).

Figure 2: Form of publication used for CbCR apart from annual report



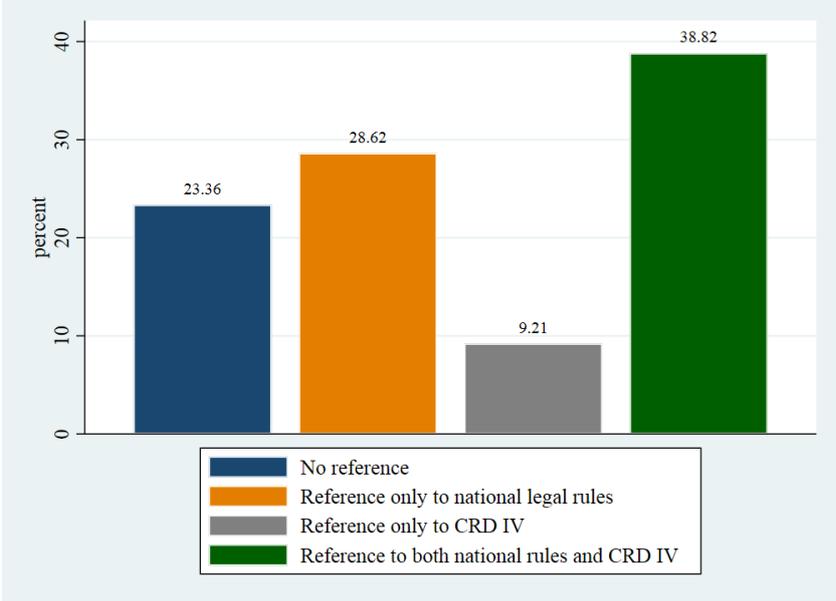
Notes: The graph shows the relative frequencies of the forms of publication used for the CbCR apart from the annual report. “No separate CbCR document” indicates that the CbCR is only published in the annual report, without any separate publication being detectable. “Separate CbCR document” indicates that the CbCR is published in a separate document which contains no other information – regardless of a parallel publication in the annual report. “CbCR information as part of a larger tax report” represents a specific scenario where the CbCR information is published as part of a larger tax report which includes additional information.

Figure 3: Use of literal expression of “CbCR” or equivalent terms



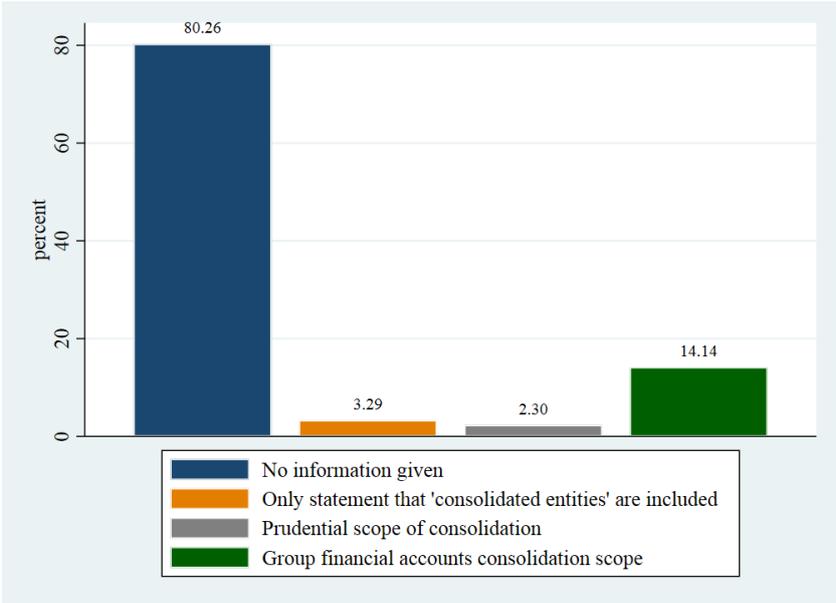
Notes: The graph shows the share of CbCRs that include the literal expression of “CbCR” or equivalent terms (accounting for different languages). “No” indicates that the literal expression or an equivalent term for CbCR is not used in the report. “Yes” indicates that the literal expression or an equivalent term for CbCR is used in the report.

Figure 4: Explanation on legal basis of CbCR



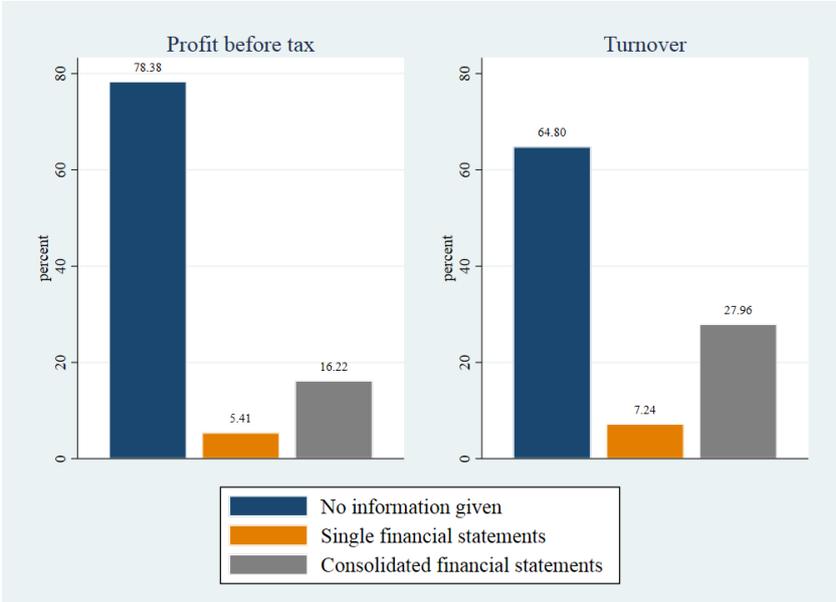
Notes: The graph shows the relative frequencies of the different explanations given on the legal basis of the CbCR. “No reference” indicates that no explanation is given on the legal basis. The other possible cases include a “Reference only to national legal rules”, “Reference only to CRD IV” and “Reference to both national rules and CRD IV”.

Figure 5: Underlying consolidation scope



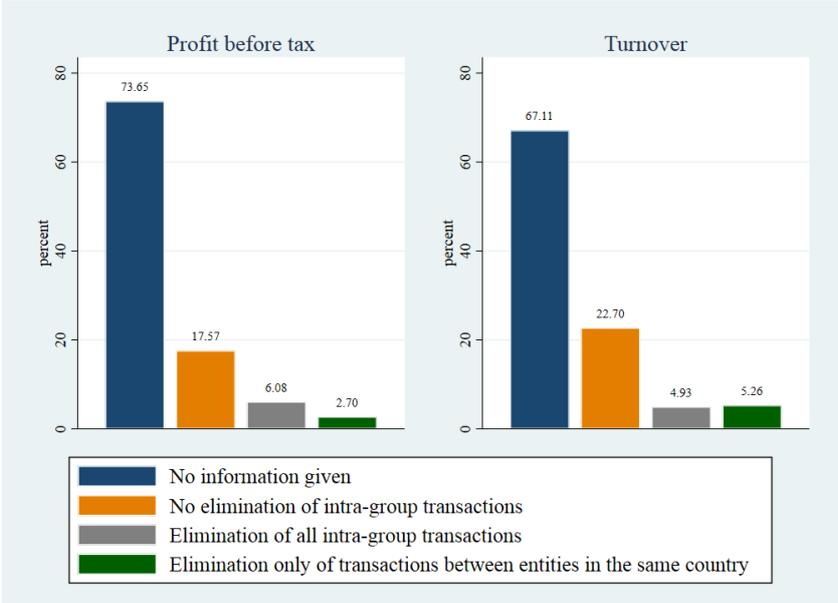
Notes: The graph shows the relative frequencies of the underlying consolidation scopes used. “No information given” indicates that no information on the underlying consolidation scope is provided in the CbCR. “Only statement that 'consolidated entities' are included” denotes the statement in the CbCR that only consolidated entities are included. “Prudential scope of consolidation” and “Group financial accounts consolidation scope” indicate that the CbCR states that the prudential consolidation scope and the group financial accounts consolidation scope are used, respectively.

Figure 6: Underlying data source for profit before tax and turnover



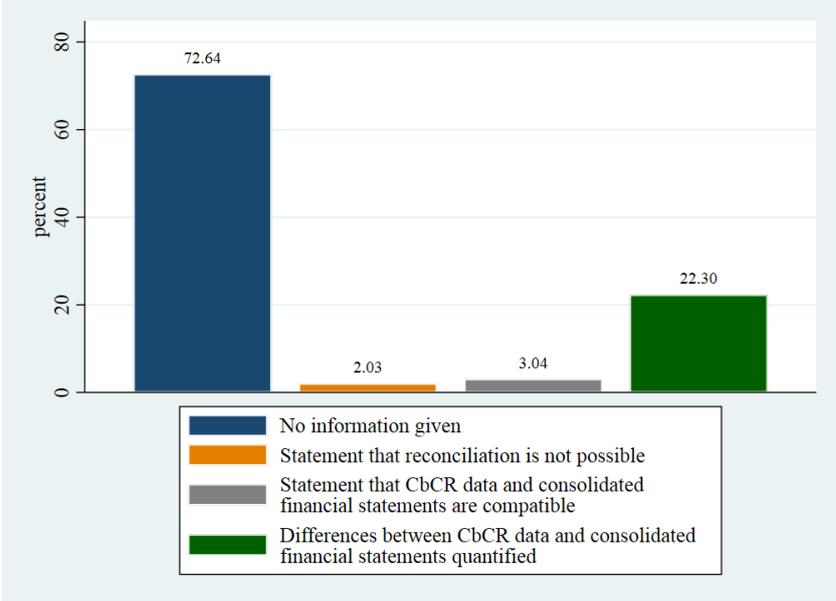
Notes: The graph shows the relative frequencies of the underlying data sources used for the by-country calculation of profit before tax and turnover. “No information given” indicates that no information on the underlying data source is provided in the CbCR. “Single financial statements” and “Consolidated financial statements” indicate that the CbCR states that single financial statements and consolidated financial statements, respectively, are used as basis for the by-country calculation of profit before tax or turnover.

Figure 7: Underlying treatment of intra-group transactions with regard to the calculation of profit before tax and turnover



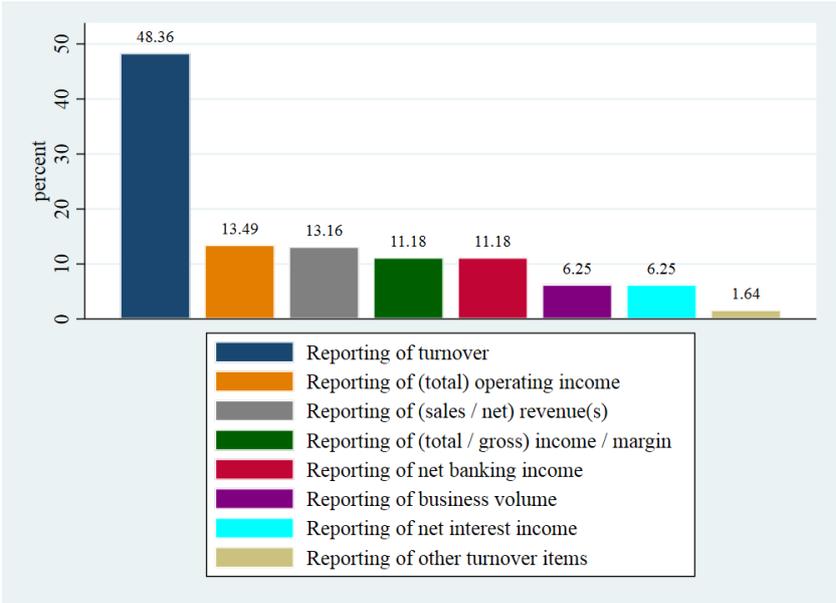
Notes: The graph shows the relative frequencies of the ways intra-group transactions are treated with regard to the calculation of profit before tax and turnover. “No information given” indicates that no information on the underlying treatment of intra-group transactions is provided in the CbCR. “No elimination of intra-group transactions”, “Elimination of all intra-group transactions” and “Elimination only of transactions between entities in the same country” indicate that the CbCR states that intra-group transactions are not eliminated, that all intra-group transactions are eliminated and that only transactions between different entities in the same country are eliminated while preserving cross-border transactions, respectively.

Figure 8: Degree of compatibility between CbCR and consolidated financial statements



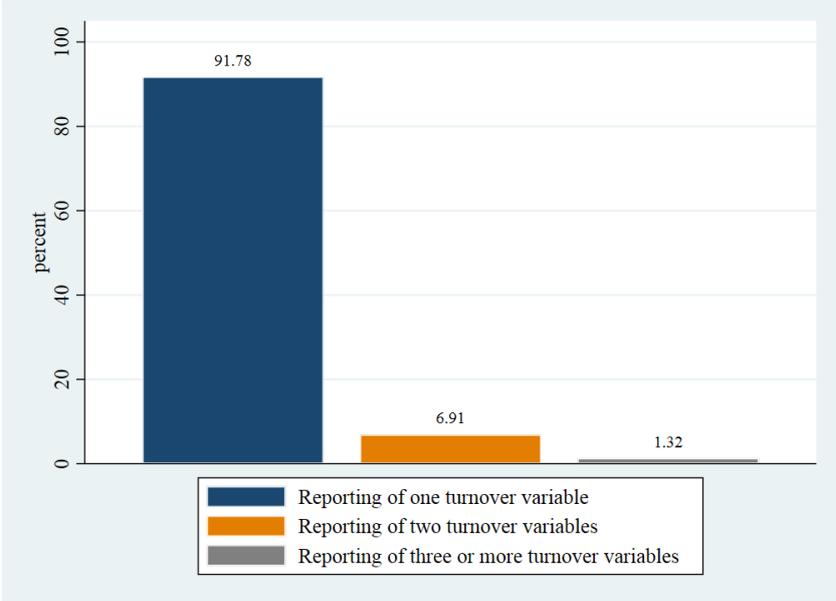
Notes: The graph shows the relative frequencies of the different degrees to which the CbCR and the consolidated financial statements are compatible. “No information given” indicates that no information on the compatibility between the CbCR and the consolidated financial statements is provided in the CbCR. “Statement that reconciliation is not possible”, “Statement that CbCR data and consolidated financial statements are compatible” and “Differences between CbCR data and consolidated financial statements quantified” indicate that the CbCR states that reconciliation between the CbCR data and the consolidated financial statements is not possible, that compatibility between the CbCR data and the consolidated financial statements is given and that differences between the CbCR data and the consolidated financial statements are quantified, respectively.

Figure 9: Expressions used for turnover



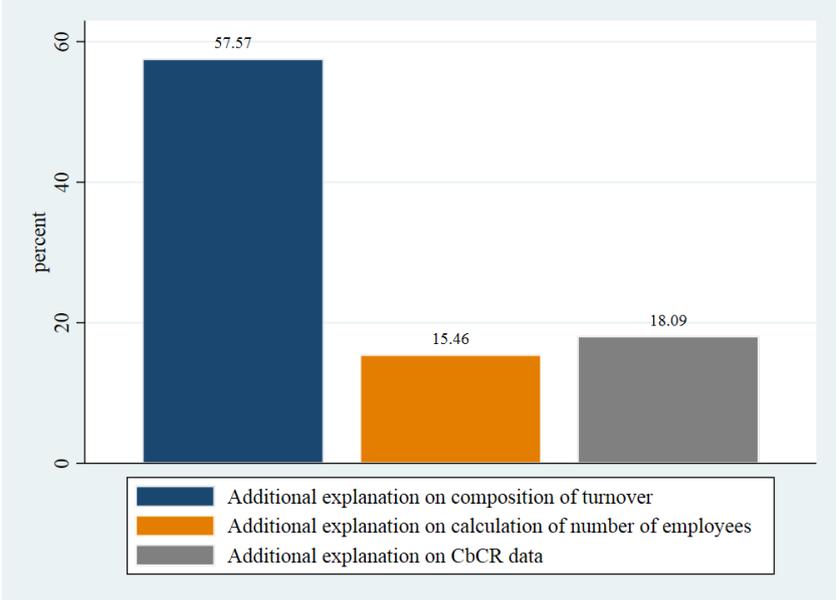
Notes: The graph shows the relative frequencies of different expressions used for the reporting of turnover in the CbCR (notwithstanding differences in language and spelling). “Reporting of turnover” refers to the cases where turnover is literally reported as “turnover”, i.e. turnover, fatturato, Umsatz, chiffre d’affaires. “Reporting of (total) operating income” refers to the reporting of (total / statutory / other) operating income, total income from operating activities, Betriebserträge. “Reporting of (sales / net) revenue(s)” refers to the reporting of (sales / net) revenue(s). “Reporting of (total / gross) income / margin” refers to the reporting of (total / gross) income / margin, margen bruto, income from continued / continuing operations. “Reporting of net banking income” refers to the reporting of net banking income / revenue, produit net bancaire, net interest and other banking income. “Reporting of business volume” refers to the reporting of business volume, volume of business, volumen de negocio. “Reporting of net interest income” refers to the reporting of net interest income, Zinsüberschuss, Nettozinsertag, both interest income and interest expense. “Reporting of other turnover items” refers to the reporting of other variables in the context of turnover, e.g. (net) fees and commissions income, net premium income, net insurance income, other income.

Figure 10: Number of turnover variables reported



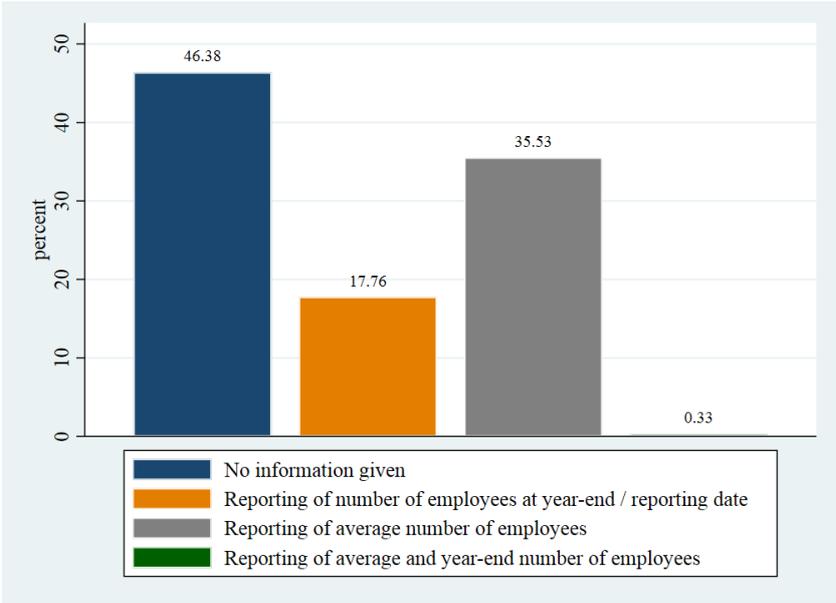
Notes: The graph shows the relative frequencies of the number of reported turnover variables. “Reporting of one turnover variable”, “Reporting of two turnover variables” and “Reporting of three or more turnover variables” refer to the reporting of one, two and three or more turnover variables, respectively, in the CbCR.

Figure 11: Provision of additional explanations



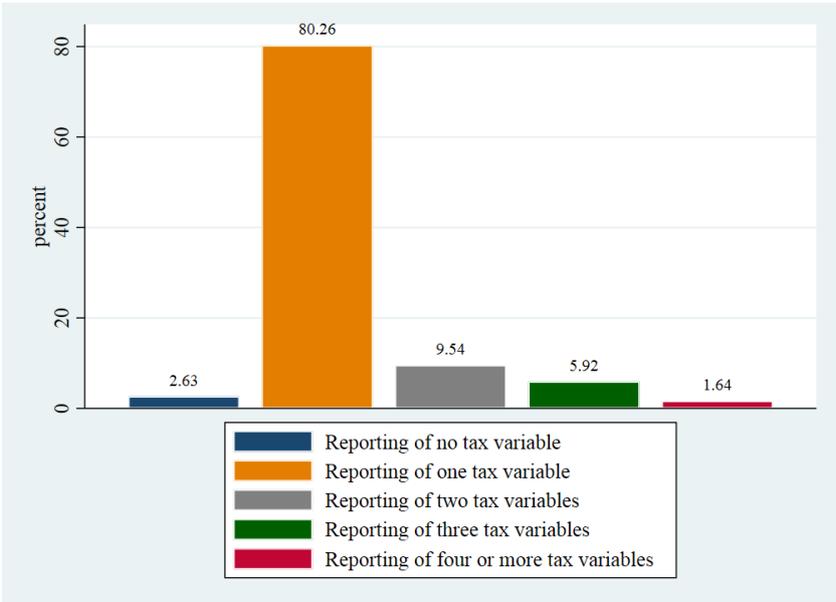
Notes: The graph shows the share of CbCRs that provide additional explanations. “Additional explanation on CbCR data” refers to explanations that help to interpret the CbCR data, such as explanations on extraordinarily high or low numbers or on the relation between different reported items. “Additional explanation on composition of turnover” refers to additional explanations on the notion of turnover or on the sub-items which are included in this variable. “Additional explanation on calculation of number of employees” refers to additional explanations on the calculation of the number of employees, whereby only information that goes beyond information as to whether the number of employees refers to an average over time or to a specific point in time is considered.

Figure 12: Manner of calculating number of employees



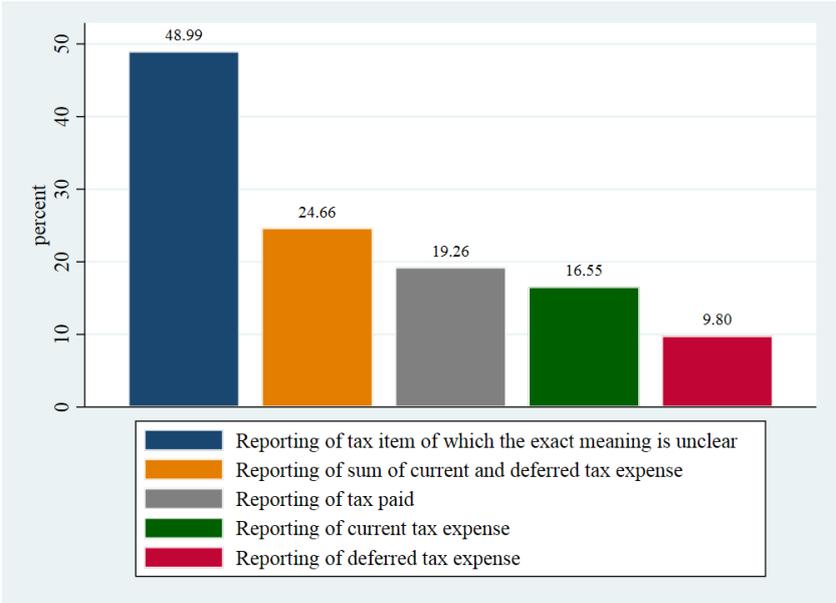
Notes: The graph shows the relative frequencies of different manners of calculating the number of employees in the CbCR. “No information given” indicates that no information as to whether the number of employees refers to an average over time or to a specific point in time is provided in the CbCR. “Reporting of number of employees at year-end / reporting date” and “Reporting of average number of employees” indicate that the number of employees at year-end or at the reporting date and the average number of employees, respectively, are considered when calculating the number of employees. “Reporting of average and year-end number of employees” indicates that both the average and the year-end number of employees are considered.

Figure 13: Number of tax variables reported



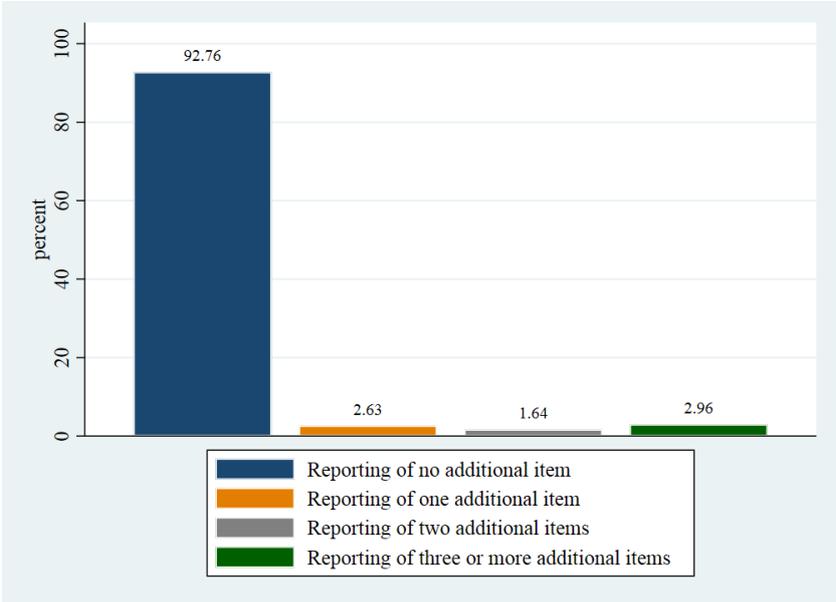
Notes: The graph shows the relative frequencies of the number of reported tax variables. “Reporting of no tax variable”, “Reporting of one tax variable”, “Reporting of two tax variables”, “Reporting of three tax variables” and “Reporting of four or more tax variables” refer to the reporting of no, one, two, three and four or more tax variables, respectively, in the CbCR.

Figure 14: Tax variables reported



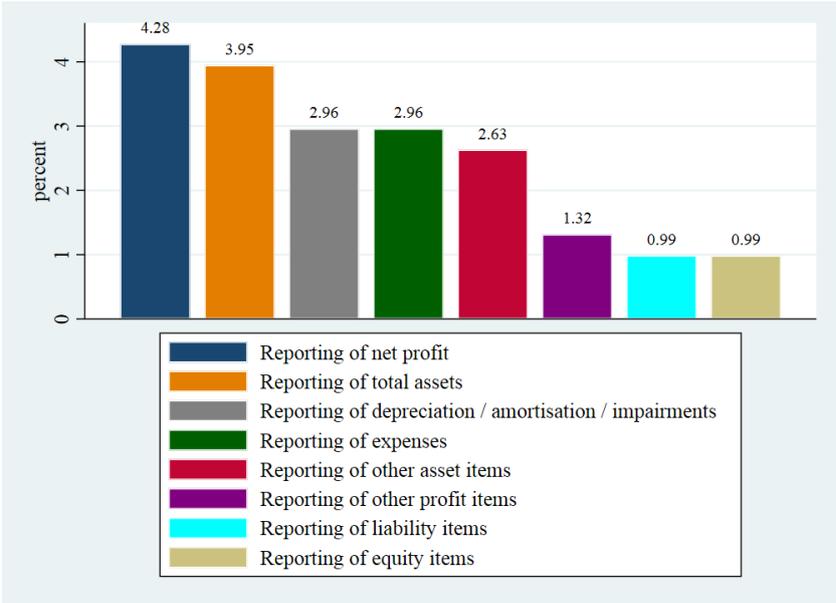
Notes: The graph shows the relative frequencies of different tax variables reported in the CbCR. The observed reported tax variables include “tax item of which the exact meaning is unclear” (e.g. only labelled “tax(es)”), “sum of current and deferred tax expense”, “tax paid”, “current tax expense” and “deferred tax expense”.

Figure 15: Number of additionally reported items beyond required CbCR items



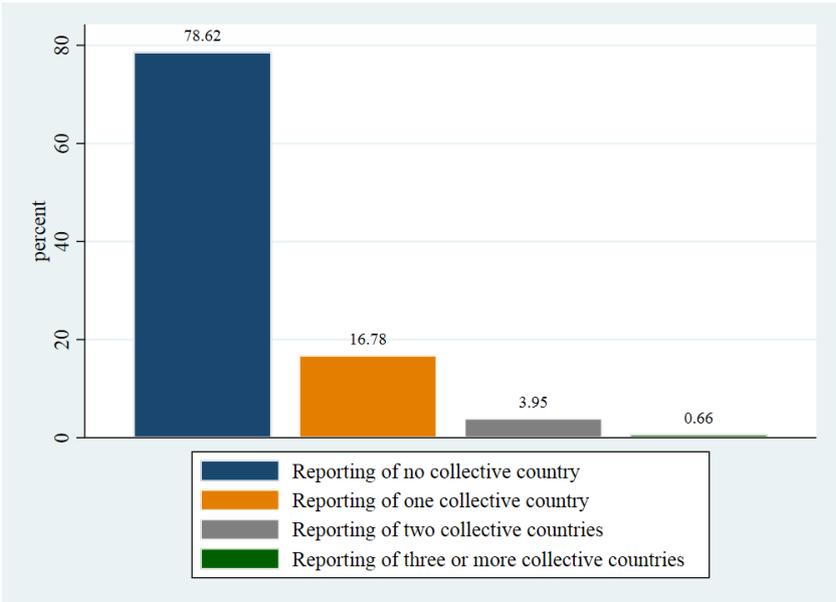
Notes: The graph shows the relative frequencies of the number of additionally reported items that go beyond the requirements of CbCR. “Reporting of no additional item”, “Reporting of one additional item”, “Reporting of two additional items” and “Reporting of three or more additional items” refer to the reporting of no, one, two and three or more additional items, respectively, in the CbCR.

Figure 16: Additionally reported items beyond required CbCR items



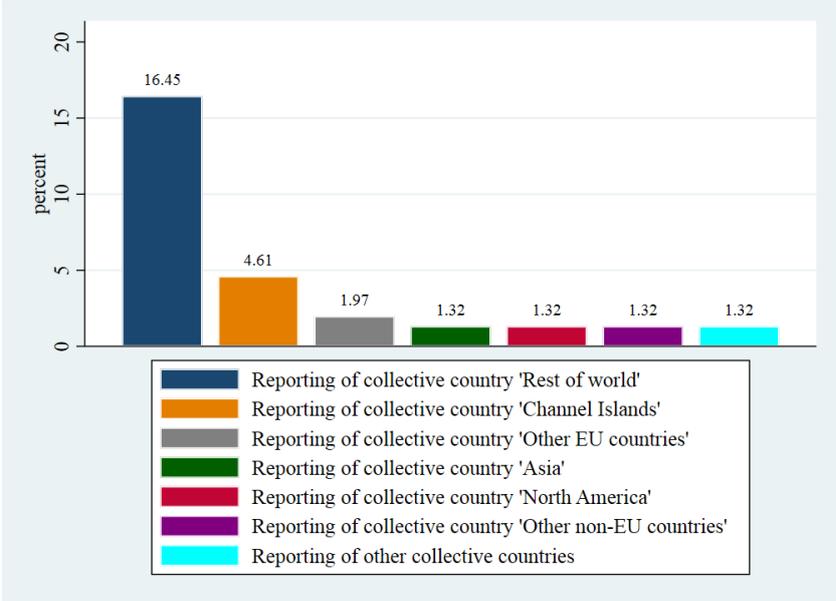
Notes: The graph shows the relative frequencies of additionally reported items that go beyond the requirements of CbCR. The observed additionally reported items include “net profit”, “total assets”, “depreciation / amortisation / impairments”, “expenses” (e.g. staff cost, operating expenses, administrative expenses, other expenses), “other asset items” (e.g. investments, cash, loans, bonds, financial assets, intangible and tangible fixed assets), “other profit items” (e.g. earnings before credit losses, net credit losses, profit before impairments), “liability items” (e.g. deposits and borrowings, financial liabilities, total liabilities) and “equity items” (e.g. allocated equity, non-controlling interests).

Figure 17: Number of collective countries reported



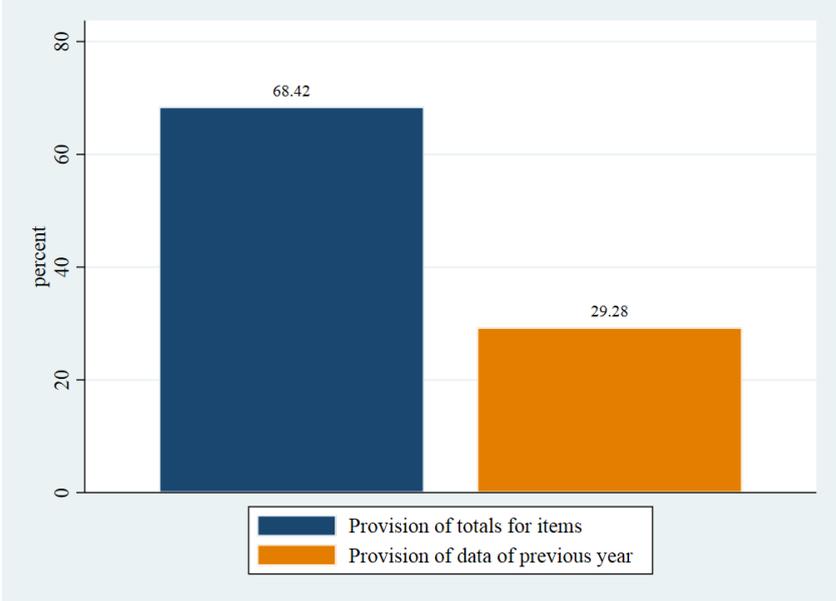
Notes: The graph shows the relative frequencies of the number of reported collective countries. “Reporting of no collective country”, “Reporting of one collective country”, “Reporting of two collective countries” and “Reporting of three or more collective countries” refer to the reporting of no, one, two and three or more collective countries, respectively, in the CbCR.

Figure 18: Different groupings of countries



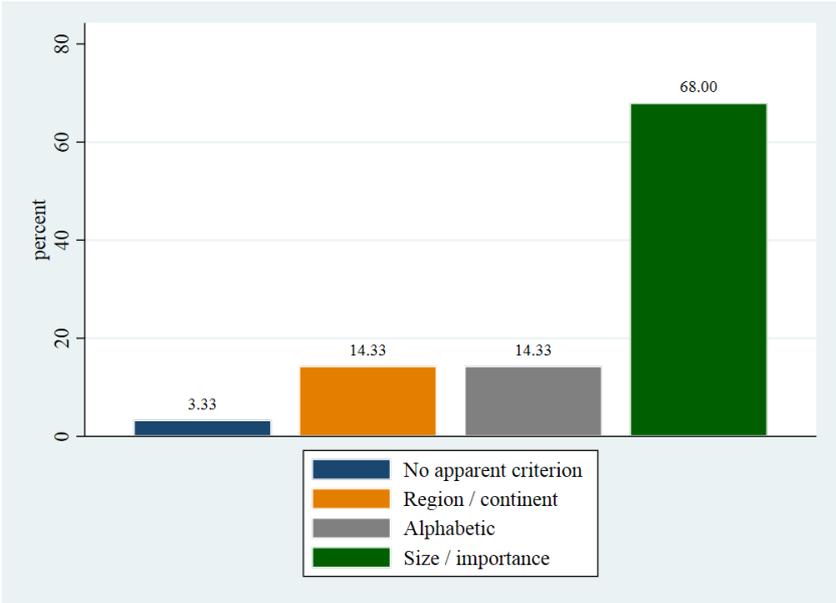
Notes: The graph shows the relative frequencies of different groupings of countries (notwithstanding differences in language and spelling) in the CbCR. The observed reported groupings of countries include “Rest of the world”, “Channel Islands”, “Other EU countries”, “Asia”, “North America”, “Other non-EU countries” and other collective countries (e.g. Latin America, Asia-Pacific and Latin America, Oceania).

Figure 19: Provision of totals for items and data of previous year



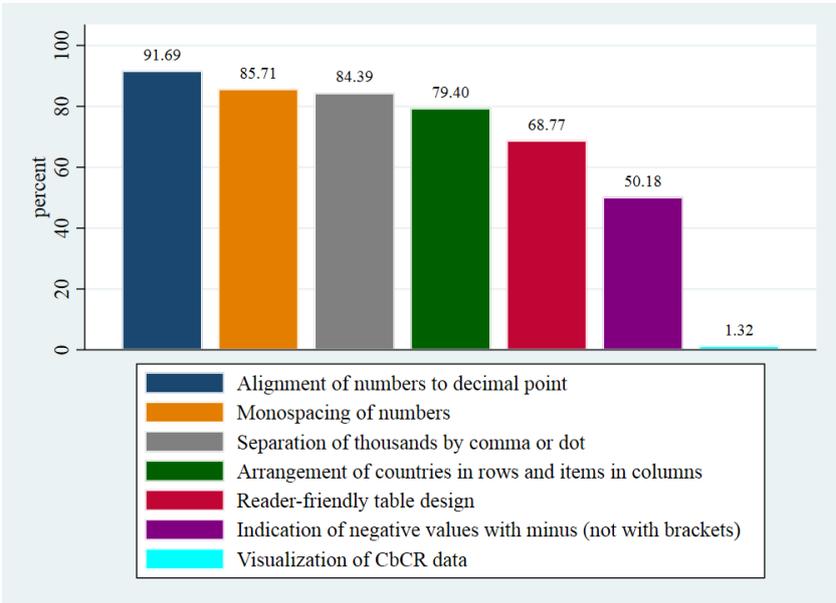
Notes: The graph shows the share of CbCRs that provide totals for the items (“Provision of totals for items”) and data of the previous year (“Provision of data of previous year”).

Figure 20: Primary sorting criterion for countries



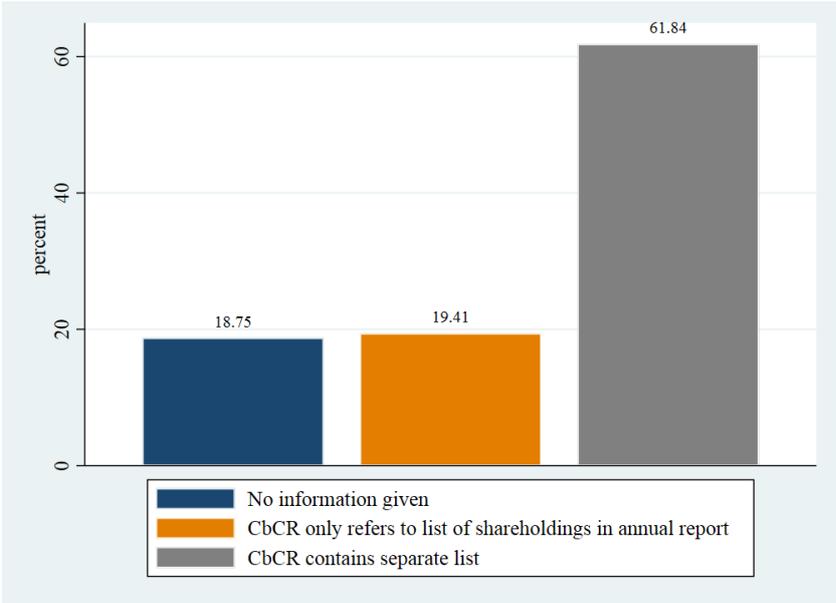
Notes: The graph shows the relative frequencies of different primary sorting criteria for the countries in the CbCR. “No apparent criterion” indicates that no apparent primary sorting criterion for the countries is provided in the CbCR. “Region / continent”, “Alphabetic” and “Size / importance” indicate that the region or continent, the alphabetic order and the size or importance (i.e. in terms of at least one of the reportable items) of the countries, respectively, are considered as the primary sorting criterion for the countries reported in the CbCR.

Figure 21: Readability of CbCR data table



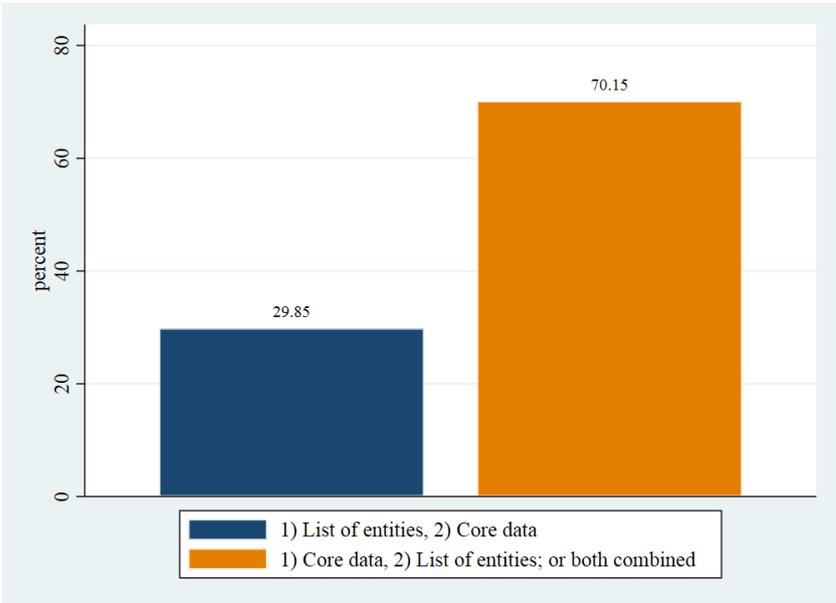
Notes: The graph shows the share of CbCRs that contain various measures in order to improve the readability of the data table(s). These measures include “Alignment of numbers to decimal point”, “Monospacing of numbers”, “Separation of thousands by comma or dot” (depending on the language), “Arrangement of countries in rows and items in columns”, “Reader-friendly table design” (e.g. using a specific layout or design or grouping certain countries for a better overview), “Indication of negative values with minus (not with brackets)” (i.e. “-“ instead of “()”), and “Visualization of CbCR data”.

Figure 22: Place of publication of list of entities



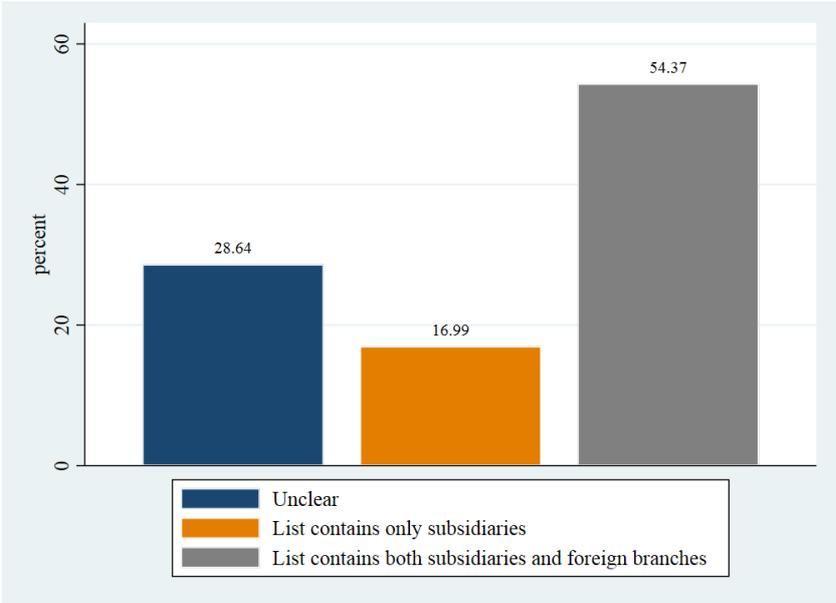
Notes: The graph shows the relative frequencies of different forms of publication of the list of subsidiaries and branches. “No information given” indicates that no information on the list of entities is provided in the CbCR. “CbCR only refers to list of shareholdings in annual report” indicates that the CbCR only refers to the list of shareholdings in the annual report. “CbCR contains separate list” indicates that the CbCR contains a separate list of entities.

Figure 23: Overall structure of CbCR



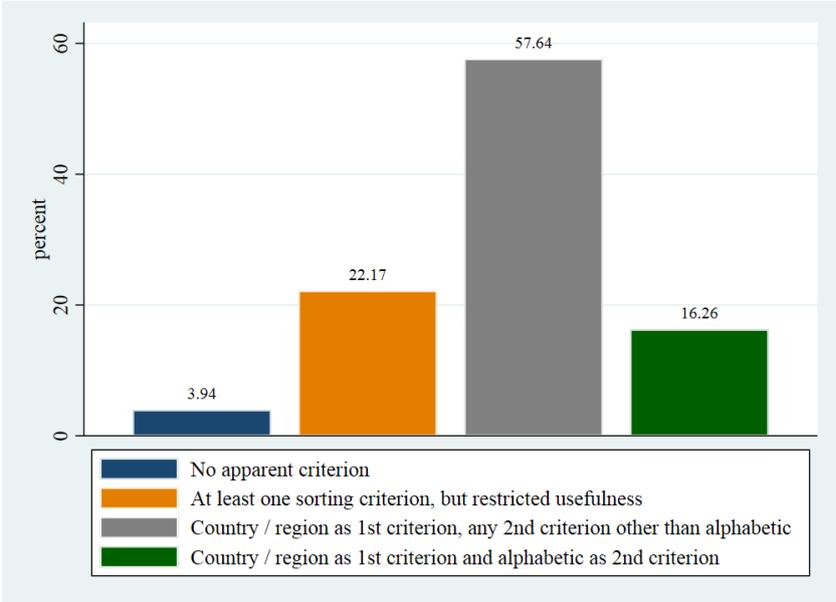
Notes: The graph shows the relative frequencies of different overall structures of the CbCR. “1) List of entities, 2) Core data” refers to the structure where the first part of the CbCR consists of the list of entities while the second part contains the core data. “1) Core data, 2) List of entities; or both combined” refers to the structure where the first part of the CbCR consists of the core data while the second part contains the list of entities or where both parts – the list of entities and the core data – are combined into a single part.

Figure 24: Information regarding foreign branches



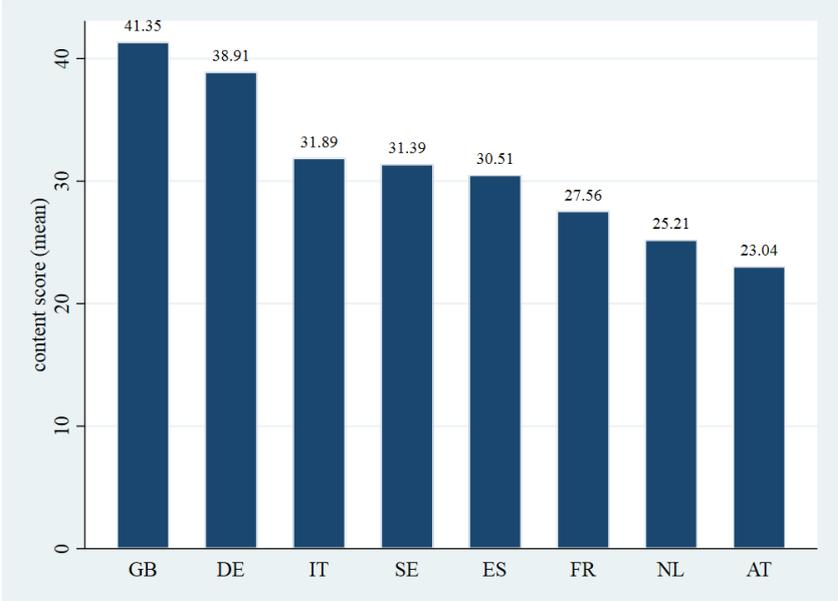
Notes: The graph shows the relative frequencies of different degrees of inclusion of foreign branches in the list of entities provided in the CbCR. Entity lists in the annual report to which the CbCR refers, but which are not part of the CbCR, are not considered. “Unclear” indicates that it is not clear whether the list of entities includes branches. “List contains only subsidiaries” and “List contains both subsidiaries and foreign branches” indicate that the list of entities provided in the CbCR contains only subsidiaries and that it contains both subsidiaries and foreign branches, respectively.

Figure 25: Sorting criteria for list of entities in CbCR



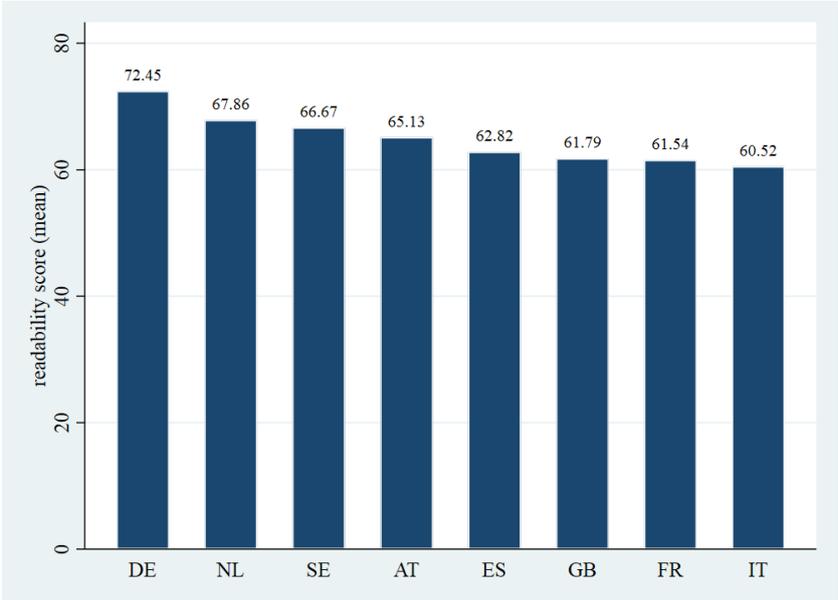
Notes: The graph shows the relative frequencies of different sorting criteria for the list of entities in the CbCR. Entity lists in the annual report to which the CbCR refers, but which are not part of the CbCR, are not considered. “No apparent criterion” indicates that no apparent sorting criterion for the list of entities is provided in the CbCR. “At least one sorting criterion, but restricted usefulness”, “Country / region as 1st criterion, any 2nd criterion other than alphabetic” and “Country / region as 1st criterion and alphabetic as 2nd criterion” refer to different sorting criteria for the list of entities in the CbCR.

Figure 26: Content score – by headquarter country



Notes: The graph shows the average score on the CbCR content for a selection of headquarter countries. The score includes the variables *cocr_term*, *legal*, *acc_std*, *cons_scope*, *data_source_plbt*, *data_source_turn*, *cons_intra_plbt*, *cons_intra_turn*, *recon_ar*, *turn_count*, *turn_expl*, *empl_date*, *empl_add*, *tax_count*, *tax_expl*, *expl_add*, *subs_ctry*, *item_add_count*, *other_ctry_count_desc*, *items_total*, *items_prevyear* and *unit_orig* (see Table 3 for a description of the variables). It is normalized to 100, whereby a score of 100 (0) indicates the highest (lowest) possible degree of transparency. The average score per headquarter country is calculated across all available CbCRs published by bank groups headquartered in the respective country.

Figure 27: Readability score – by headquarter country



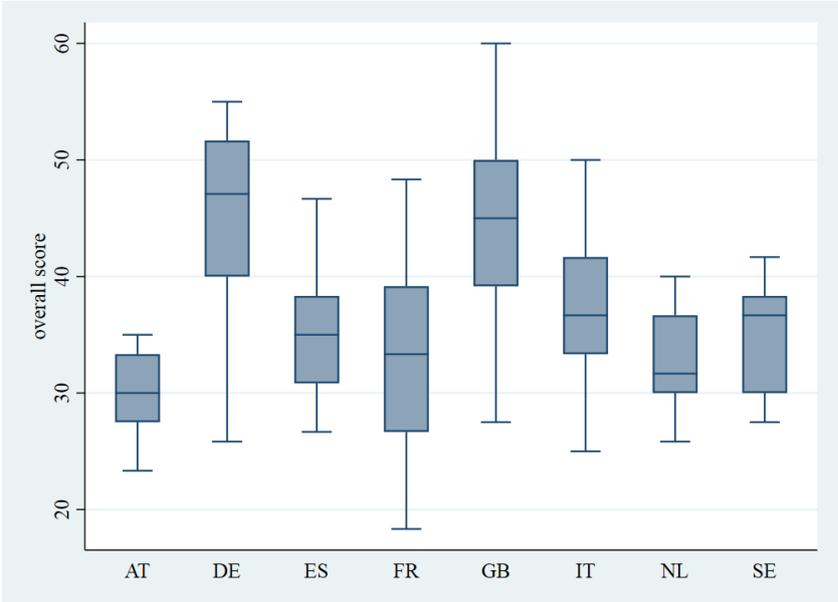
Notes: The graph shows the average score on the readability of the CbCR data table(s) for a selection of headquarter countries. The score includes the variables *num_aligned*, *num_monospaced*, *num_thousands*, *num_negative*, *table_layout*, *table_design* and *visual* (see Table 3 for a description of the variables). It is normalized to 100, whereby a score of 100 (0) indicates the highest (lowest) possible degree of transparency. The average score per headquarter country is calculated across all available CbCRs published by bank groups headquartered in the respective country.

Figure 28: Overall score – by headquarter country



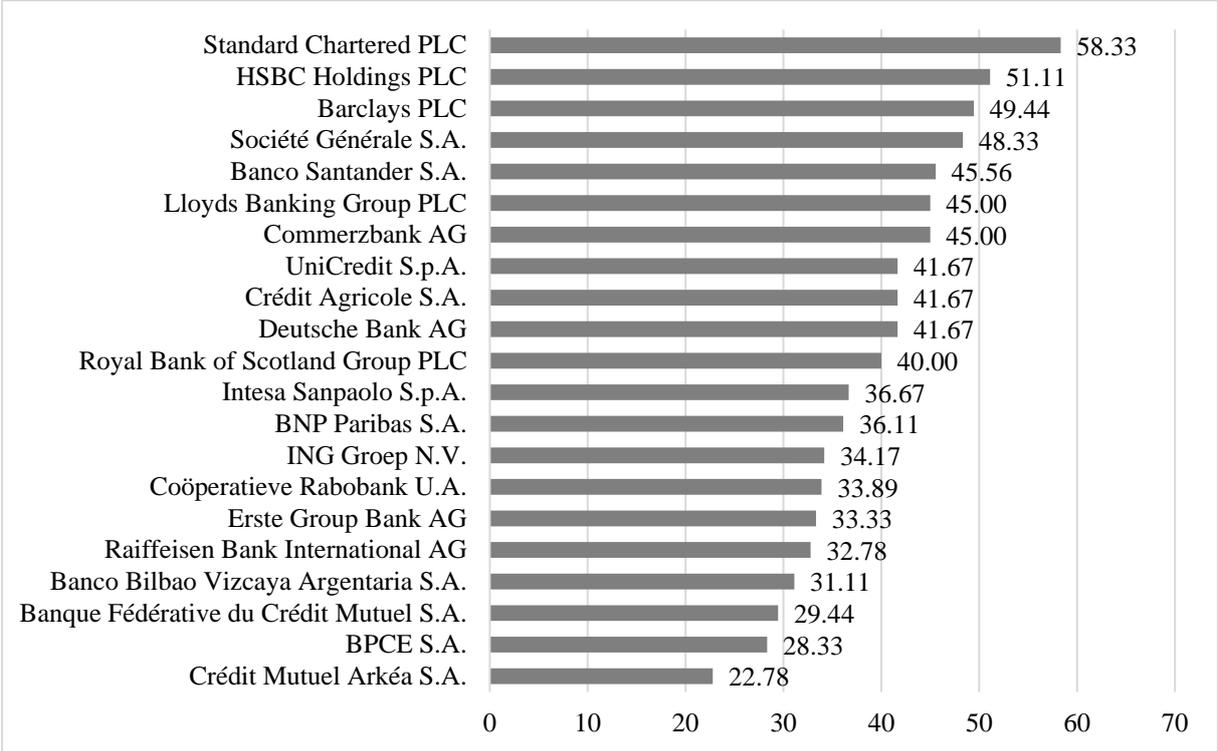
Notes: The graph shows the average overall score for a selection of headquarter countries. The overall score is composed of the content score and of the readability score and also takes into consideration the place of publication of both the CbCR and the list of entities (see Table 3 for a description of the variables). It is normalized to 100, whereby a score of 100 (0) indicates the highest (lowest) possible degree of transparency. The average score per headquarter country is calculated across all available CbCRs published by bank groups headquartered in the respective country.

Figure 29: Overall score – box plot by headquarter country



Notes: The graph shows the distribution (median, 25th percentile, 75th percentile, lower and upper adjacent values) of the overall score for a selection of headquarter countries. The overall score is composed of the content score and of the readability score and also takes into consideration the place of publication of both the CbCR and the list of entities (see Table 3 for a description of the variables). It is normalized to 100, whereby a score of 100 (0) indicates the highest (lowest) possible degree of transparency. The distribution of the score per headquarter country is calculated across all available CbCRs published by bank groups headquartered in the respective country. Outside values are not plotted.

Figure 30: Overall score – average across years for selected bank groups



Notes: The graph shows the average overall score for selected bank groups. The overall score is composed of the content score and of the readability score and also takes into consideration the place of publication of both the CbCR and the list of entities (see Table 3 for a description of the variables). It is normalized to 100, whereby a score of 100 (0) indicates the highest (lowest) possible degree of transparency. The average score per bank group is calculated across the years 2014-2016. The selection of bank groups includes the 20 largest bank groups in terms of the average total number of employees and the bank groups with the highest and lowest score, respectively.

Tables

Table 1: Transposition of Article 89 of the CRD IV into the national laws of selected EU Member States and recommendations by the European Banking Authority

Item / Topic	European Banking Authority	France	Germany	Italy	United Kingdom
Publication	Annex or notes to financial statements or separate report	Annual report, annex to financial statements or separate document on website; list of entities and table containing key financials shall be presented one after the other in the document where they are published	-	Annex to financial statements or website in combination with link in financial statements	Annual report or website in combination with link in annual report
Scope of consolidation	Prudential consolidation scope	Accounting consolidation scope	Accounting consolidation scope	-	Accounting consolidation scope, but only for firms within scope of CRD IV
Treatment of intra-group transactions	Before adjustments for intra-group cross-border transactions and other consolidated adjustments	-	Gross basis; institutions can decide whether they want to consolidate intra-group transactions within countries	-	-
Turnover	Consistent with the institution's financial statements, e.g. total net banking income (i.e. total net income before impairment and operating expenses, but including net interest income, net fees and commissions income, net trading income and other operating income)	"Produit net bancaire" (net banking income); "chiffre d'affaires" (turnover)	Total net income before impairment and operating expenses, but including net interest income, net fees and commissions income, net trading income and other operating income	Net interest and other banking income as per item 120 of the income statement and the consolidated income statement	Consistent with the institution's financial statements; e.g. total income before impairment and operating expenses, but after net interest, net commissions/fees income, investment and trading income and net insurance premiums

Item / Topic	European Banking Authority	France	Germany	Italy	United Kingdom
Number of employees on a full-time equivalent basis	-	-	In line with § 267 Sec. 5 HGB: average, without employees in training	Ratio between the total number of hours worked by all employees, excluding overtime, and the contractually agreed annual total for a full-time employee	Average; no requirement to report on workers who are not employees
Profit or loss before tax	-	-	-	Sum of items 250 and 280 (the latter before tax) of the income statement	Consistent with the institution's financial statements
Tax on profit or loss	Separately on a cash basis (taxes paid) and on an accrued basis (only current tax expense, no deferred taxes or provisions for uncertain tax liabilities)	Current and deferred tax expense	Accounting tax expense	Sum of the taxes referred to in item 260 of the income statement and income taxes relating to groups of assets held for sale	Corporation tax paid
Other	Institutions shall reconcile the published information with the consolidated annual financial statements where applicable	-	-	-	Institutions are encouraged to provide additional explanations and information that might be considered helpful to readers
Source	EBA (2014a, 2014b, 2014c, 2014d, 2014e)	Art. L511-45 Code monétaire et financier; Décret n° 2014-1657 du 29 décembre 2014 pris pour l'application de l'article L511-45 du code monétaire et financier	BaFin (2015)	Circolare n. 285 del 17 dicembre 2013, Parte Prima, Titolo III, Capitolo 2	Statutory Instrument 2013 No. 3118; HM Treasury (2013a, 2013b)

Notes: The table shows how different aspects of Article 89 of the CRD IV are transposed into the national laws of selected Member States, including clarifications provided by the European Banking Authority. The selection of Member States is based on countries for which at least 15 CbCRs are included in our sample and where national laws and guidelines could be interpreted reliably. We focus only on aspects that go beyond the wording of Article 89 of the CRD IV.

Table 2: CbCR sample composition – Headquarter countries

Headquarter country	2014	2015	2016	Total
Austria	5	6	6	17
Belgium	3	3	4	10
Cyprus	1	2	2	5
Denmark	3	3	3	9
France	12	14	13	39
Germany	19	19	18	56
Greece	2	2	2	6
Ireland	1	1	1	3
Italy	12	15	12	39
Luxembourg	0	2	3	5
Netherlands	6	7	7	20
Poland	0	0	1	1
Portugal	0	1	1	2
Slovenia	1	1	1	3
Spain	11	12	11	34
Sweden	5	5	5	15
United Kingdom	10	16	14	40
Total	91	109	104	304

Notes: The table shows the number of CbCRs (bank group-years) by headquarter country and year.

Table 3: List of variables and transparency scores

Scores		Variables		
		Name	Description	Values
Overall score	Content score	<i>cbr_term</i>	Use of literal expression of “CbCR” or equivalent terms	0: No 1: Yes
		<i>legal</i>	Explanation on legal basis of CbCR	0: No reference 1: Reference only to national legal rules 2: Reference only to CRD IV 3: Reference to both national rules and CRD IV
		<i>acc_std</i>	Underlying accounting standards	0: No information given 1: Local GAAP 2: IFRS
		<i>cons_scope</i>	Underlying consolidation scope	0: No information given 1: Only statement that 'consolidated entities' are included 2: Prudential scope of consolidation 3: Group financial accounts consolidation scope
		<i>data_source_plbt</i>	Underlying data source for profit before tax	0: No information given 1: Single financial statements 2: Consolidated financial statements
		<i>data_source_turn</i>	Underlying data source for turnover	0: No information given 1: Single financial statements 2: Consolidated financial statements
		<i>cons_intra_plbt</i>	Underlying treatment of intra-group transactions with regard to the calculation of profit before tax	0: No information given 1: No elimination of intra-group transactions 2: Elimination of all intra-group transactions 3: Elimination only of transactions between entities in the same country

Scores		Variables		
		Name	Description	Values
Overall score	Content score	<i>cons_intra_turn</i>	Underlying treatment of intra-group transactions with regard to the calculation of turnover	0: No information given 1: No elimination of intra-group transactions 2: Elimination of all intra-group transactions 3: Elimination only of transactions between entities in the same country
		<i>recon_ar</i>	Degree of compatibility between CbCR and consolidated financial statements	0: No information given 1: Statement that reconciliation is not possible 2: Statement that CbCR data and consolidated financial statements are compatible 3: Differences between CbCR data and consolidated financial statements quantified
		<i>turn_count</i>	Number of turnover variables reported	0: Reporting of one turnover variable 1: Reporting of two turnover variables 2: Reporting of three or more turnover variables
		<i>turn_expl</i>	Provision of additional explanation on composition of turnover	0: No 1: Yes
		<i>empl_date</i>	Manner of calculating number of employees	0: No information given 1: Reporting of number of employees at year-end/ reporting date 2: Reporting of average number of employees 3: Reporting of average and year-end number of employees
		<i>empl_add</i>	Provision of additional explanation on calculation of number of employees	0: No 1: Yes
		<i>tax_count</i>	Number of tax variables reported	0: Reporting of no tax variable 1: Reporting of one tax variable 2: Reporting of two tax variables 3: Reporting of three tax variables 4: Reporting of four or more tax variables

Scores		Variables		
		Name	Description	Values
Overall score	Content score	<i>tax_expl</i>	Definition of all income tax items	0: No additional explanation 1: Indirect explanation on all income tax items 2: Explicit explanation on all income tax items
		<i>expl_add</i>	Provision of additional explanation on CbCR data	0: No 1: Yes
		<i>subs_ctry</i>	Provision of data on public subsidies received on by-country basis	0: No 1: Yes
		<i>item_add_count</i>	Number of additionally reported items beyond required CbCR items	0: Reporting of no additional item 1: Reporting of one additional item 2: Reporting of two additional items 3: Reporting of three or more additional items
		<i>other_ctry_count_desc</i>	Number of collective countries reported (descending order)	0: Reporting of three or more collective countries 1: Reporting of two collective countries 2: Reporting of one collective country 3: Reporting of no collective country
		<i>items_total</i>	Provision of totals for items	0: No 1: Yes
		<i>items_prevyear</i>	Provision of data of previous year	0: No 1: Yes
		<i>unit_orig</i>	Unit used for money amounts of CbCR items	0: Millions 1: Thousands 2: Exact number

Scores		Variables		
		Name	Description	Values
Overall score	Readability score	<i>num_aligned</i>	Alignment of numbers to decimal point	0: No 1: Yes
		<i>num_monospaced</i>	Monospacing of numbers	0: No 1: Yes
		<i>num_thousands</i>	Separation of thousands by comma or dot	0: No 1: Yes
		<i>num_negative</i>	Indication of negative values	0: With brackets 1: With minus
		<i>table_layout</i>	Arrangement of countries in rows and items in columns	0: No 1: Yes
		<i>table_design</i>	Reader-friendly table design	0: No 1: Yes
		<i>visual</i>	Visualization of CbCR data	0: No 1: Yes
	Additional variables included in overall score	<i>publ_ar</i>	Publication of CbCR in annual report	0: No 1: Yes
		<i>publ_sep</i>	Publication of CbCR in separate document	0: No separate CbCR document 1: Separate CbCR document 2: CbCR information as part of a larger tax report
		<i>list_sep</i>	Place of publication of list of entities	0: No information given 1: CbCR only refers to list of shareholdings in annual report 2: CbCR contains separate list

Scores	Variables		
	Name	Description	Values
<p>Additional variables not included in score analysis</p> <p>(Reason: Variable values do not imply an increase in transparency or variables are only applicable to a sub-sample of CbCRs.)</p>	<i>ar_section</i>	Publication of CbCR in separate chapter of annual report	0: No 1: Yes
	<i>turn_variables</i>	Expressions used for turnover	Free text
	<i>tax_variables</i>	Tax variables reported	Free text
	<i>item_add_variables</i>	Additionally reported items beyond required CbCR items	Free text
	<i>other_ctry_variables</i>	Different groupings of countries	Free text
	<i>countries_sort</i>	Primary sorting criterion for countries	0: No apparent criterion 1: Region/ continent 2: Alphabetic 3: Size/ importance
	<i>list_order</i>	Overall structure of CbCR	0: 1) List of entities, 2) Core data 1: 1) Core data, 2) List of entities; or both combined
	<i>list_branch</i>	Information regarding foreign branches	0: Unclear 1: List contains only subsidiaries 2: List contains both subsidiaries and foreign branches
	<i>entities_sort</i>	Sorting criteria for list of entities in CbCR	0: No apparent criterion 1: At least one sorting criterion, but restricted usefulness 2: Country / region as 1 st criterion, any 2 nd criterion other than alphabetic 3: Country / region as 1 st criterion and alphabetic as 2 nd criterion

Notes: The table shows the variables included in the analyses and the composition of the transparency scores. Generally, a higher value implies more transparency or a better readability.

Table 4: Pairwise correlation coefficients between transparency scores, total number of employees and share of reported tax havens

	<i>score_overall</i>	<i>score_content</i>	<i>score_read</i>	<i>empl_sum</i>	<i>th_share</i>
<i>score_overall</i>	1.000				
<i>score_content</i>	0.970***	1.000			
<i>score_read</i>	0.325***	0.135**	1.000		
<i>empl_sum</i>	0.207***	0.207***	0.054	1.000	
<i>th_share</i>	0.194***	0.179***	0.123**	-0.143**	1.000
<i>N</i>	304				

Notes: The table shows the pairwise correlation coefficients between the transparency scores, the total number of employees and the share of reported tax havens. *score_overall*, *score_content* and *score_read* denote the overall score, the content score and the readability score, respectively (see Table 3 for a description of the variables included in the scores). *empl_sum* denotes the total number of employees reported in the CbCR and is used as proxy for the size of the bank group. *th_share* denotes the share of tax havens in the total number of countries reported in the CbCR, excluding the headquarter country. Tax havens are defined according to Hines (2010). t-statistics are shown in parentheses. *, ** and *** indicate statistical significance at the 10%, 5% and 1% level, respectively.



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