Analysing MNEs structure and activities using country-by-country reports. Evidence from the Italian dataset*

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Abstract

This paper is based on microdata originating in the first collection of country-by-country reporting (CbCR) – a new reporting tool to be filed by multinational enterprises (MNEs). It analyses the differences between CbCR and other widely used data sources of MNEs and presents the case of MNE activities in Italy. The CbCR dataset is used to understand the global distribution of MNE activities. Results show that foreign activities are mostly concentrated in high-income countries for all economic indicators. In low-income countries, MNEs activity appears to be concentrated in labour-intensive industries. Middle-income countries have a relatively higher importance in terms of tangible assets and employment opportunities than they do in terms of revenues and profits. Investment hubs have a relatively higher share in global MNEs profits than they do in global MNEs tangible assets and employment. The CbCR data can be useful for policymakers to obtain an indication on how a country is positioned in the global value chain (GVC) and its attractiveness for foreign companies.

Keywords: BEPS, corporate taxation, country-by-country reporting, GVC, multinational firms, offshoring

JEL classification codes: F23, H25, H26, M16

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The views and opinions expressed in this paper are those of the authors and do not necessarily reflect the official position of the institution.

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1. Introduction

This work takes advantage of a new source of data, namely country-by-country reporting (CbCR). The availability of high quality and comprehensive data on the global activities of multinational enterprises (MNEs) – hitherto a major challenge for tax administrations – has been addressed by the international community in the context of the OECD/G20 Base Erosion and Profit Shifting (BEPS) Project, mainly under Action 11 (OECD, 2015a) and Action 13 (OECD, 2015b).

Under BEPS Action 13 "Transfer Pricing Documentation and Country-by-Country Reporting", a new reporting tool has been developed for MNEs with global revenues above €750 million. This tool provides that MNEs have to file CbCR, which include information on a set of variables, such as revenues, profits, taxes, employees and tangible assets, broken down on a country-by-country basis. Tax authorities typically receive CbCRs from MNEs whose ultimate parent entity is resident for tax purposes in the country concerned; these CbCRs are then exchanged with the tax authorities of the foreign jurisdictions in which MNEs report their foreign activities.[1] This exchange of CbCRs gives each tax authority access to data on the global activities of domestic and foreign MNEs in all jurisdictions.

This new tool is mainly intended to be used by tax authorities to conduct high-level assessments on transfer pricing and BEPS-related risks. However, countries have agreed that CbCRs may also be used by tax authorities to carry out economic and statistical analysis on MNEs and BEPS (OECD, 2015b, para. 25).[2] This analysis of CbCRs enables policymakers to analyse, in aggregate terms, the business structures of MNEs from a global perspective.

CbCRs began to be collected by tax authorities in 2018, but on information for fiscal year 2016. In September 2019, Italy's Department of Finance of the Ministry of Economy and Finance received data from the Italian Tax Revenue Agency and began to build a dataset for their own statistical purposes.

Statistical tables of Italian CbCRs have been published in the OECD's corporate tax statistics database.[3] Under BEPS Action 11 "Measuring and monitoring BEPS", OECD member states agreed to regularly publish anonymized and aggregated CbCR statistics to support the economic analysis of BEPS. To this end and in accordance with their confidentiality standards, each jurisdiction compiles the CbCR filings of MNEs that have their ultimate parent entity (UPE) in the country into a single anonymized and aggregated dataset, and then shares it with the OECD for public release. The first release took place on 8 July 2020 and is based on the

[1] Section 3 explains key CbCR concepts, including the definition of ultimate parent entity (UPE).
[2] This provision is also included in the relevant legal instruments governing the exchange of CbCRs between jurisdictions.
[3] https://stats.oecd.org/Index.aspx?DataSetCode=CBCR_TABLEI.

data for fiscal year 2016 received by 26 reporting jurisdictions, including Italy. The second release, based on 2017 data, was on 29 July 2021. CbCR was not yet mandatory in few important countries, such as the United States, with respect to 2016 data, however, voluntary CbCR filing was available.

The main conceptual difference between the OECD data and the dataset used in the present analysis is that the former data provide a comprehensive perspective on the global activities of all MNEs, but only in the form of aggregated and anonymized data, as sent out by national tax authorities.[4] The present analysis is based on a smaller subset of MNEs, and only covers the operations of national and foreign MNEs with a presence in Italy. In addition, the dataset used in this analysis presents a higher level of granularity than the OECD dataset, thanks to CbCR microdata, i.e. MNE-level data on a jurisdiction-by-jurisdiction basis. This presents advantages when conducting economic and statistical analysis, especially of BEPS.[5]

The present analysis aims to obtain insights on the global distribution of domestic and foreign MNE activities from CbCR data collected for the first time and presents the case of Italian MNEs for fiscal year 2016.[6] Wherever possible, the global distribution of Italian MNEs is compared to the global distribution of foreign MNEs to identify potential similarities in the scale and location of operations. A snapshot of the activities of foreign MNEs in Italy is also provided. Analysis of the distribution of the financial variables reported in the CbCR enable policymakers to obtain a snapshot of a country's positioning in global value chains (GVCs) and its attractiveness for foreign companies; for example, this could be done by investigating the extent to which foreign MNEs choose to locate assets or employees in a specific economy.[7]

Section 2 contains an overview of existing data sources on the global activities of Italian MNEs and illustrates the innovative features of CbCRs and their shortcomings. Section 3 explains the methodology for building the dataset from raw CbCR data. Section 4 analyses the outward reach of Italian MNEs and compares it with that of foreign MNEs to identify patterns. Section 5 examines the geographical distribution of domestic and foreign MNE activities, as well as the contribution of foreign MNEs to domestic activities. Section 6 focuses on the sectoral distribution of MNE activities. Section 7 concludes.

[4] Several countries were unable to provide the OECD with aggregated and anonymized data for fiscal year 2016, so the OECD data do not yet encompass all MNEs worldwide.

[5] An analysis of BEPS originating from CbCR data for 2017 is available in Bratta et al. (2021).

[6] While our study was the first to describe the CbCR data, other studies used aggregated data (Casella and Souillard, 2022) or microdata from Germany (Fuest et al., 2021). Further, our analysis is connected with the strand of literature focusing on the FDI location determinants. See Nielsen et al. (2017) for a recent review of the literature.

[7] While there is plenty of literature analysing the importance of GVCs (among others, Antràs and Chor, 2021; and UNCTAD, 2021), some studies have pointed out the need for improved data on MNE activities (Johnson, 2017).

2. Country-by-country reports – a new perspective

This section provides a brief overview of the most frequently used data sources on MNEs activities. However, it does not attempt to exhaustively evaluate the pros and cons of each data source, but rather provide an overview of the innovative features of CbCR data.

Existing data sources on MNEs take both macro- and micro-level perspectives as they provide information on the aggregate activities of Italian MNEs and the activities of individual firms. At macro-level, national statistics and Eurostat statistics provide inward and outward foreign affiliates statistics (FATS) (Eurostat 2012). The latter presents information on the in-country activities of foreign-owned enterprises (inward FATS), and on the activities abroad of domestically-owned enterprises (outward FATS). FATS statistics are based on census surveys. As to inward FATS, data include information on variables, such as: (i) number of enterprises; (ii) number of employees; (iii) turnover; (iv) production value; (iv) value added; (v) gross operating surplus; (vi) purchase of goods and services; (vii) personnel costs; (viii) gross investment in tangible goods; and (ix) research and development (R&D) expenditure. As to outward FATS, these include information on: (i) number of enterprises; (ii) number of employees; (iii) turnover; (iv) personnel costs; (v) gross investment in tangible goods; and (vi) value added. For each reporting country, variables are available by controlling country (inward FATS) and by partner country (outward FATS), although data are not available for several countries. FATS statistics also provides data on the key indicators of foreign affiliates of MNEs, but only with respect to the national economy.

The Orbis-BvD database is the most frequently used source for microdata. This database contains firm-level financial account information on companies worldwide, as well as details on balance sheet and income statements, both at a consolidated and unconsolidated level, as well as data on the number of employees and ownership structure. Although this database is one the largest source of data, one of its main disadvantages is that its geographic coverage is limited and has a limited amount of data on MNEs from the United States and several investment hubs.[8]

[8] We define "investment hubs" as economies with a share of inward FDI stock as a percentage of GDP greater than 150 per cent (in line with OECD, 2020): namely, Anguilla, Aruba, the Bahamas, British Virgin Islands, Cayman Islands, the Congo, Cyprus, Hong Kong (China), Ireland, Liberia, Luxembourg, Malta, Mozambique, the Netherlands, Saint Kitts and Nevis, Saint Vincent and the Grenadines, Seychelles, Singapore and Switzerland. A conceptually similar source to Orbis for data on MNEs from the United States is the United States Bureau of Economic Analysis (BEA). For a deeper analysis of the representativeness of the Orbis dataset, see Bajgar et al. (2020) For a comprehensive comparative analysis between CbCR and Orbis data, see Bratta et al. (2021).

Another relevant source of microdata are national tax returns, which contain information on the tax liabilities of Italian enterprises and foreign enterprises with a taxable presence in Italy. Although tax returns enable an analysis of the contribution of domestic and foreign-controlled enterprises to national revenues, one of the main limitations of this data for the analysis of MNEs is that they provides no information on their economic activities and tax liabilities in foreign countries.

The CbCR data contain innovative features, which enable governments and researchers to obtain a more refined and comprehensive perspective on the global activities of MNEs overcoming some of the limitations of existing data sources.

CbCRs comprise a comprehensive set of variables with an extensive geographic coverage, including countries for which coverage in existing data sources is generally poor. These features are described in more detail below:

- *Combination in one single source of financial and tax information*: CbCRs were developed under a tax policy perspective within the BEPS framework. The main approach in detecting BEPS behaviours is the misalignment between the location where economic activities take place, as reflected by indicators, such as revenues, employees or tangible assets, and the location where profits are taxed, as reflected by the amount of profits and taxes reported in each country.9 The CbCR therefore combines economic and financial variables with tax variables, i.e. the taxes accrued and paid in each country, as opposed to existing data sources on MNEs which were not developed for tax analysis purposes, and which therefore do not include such information.
- *New variables not usually observed in other datasets*: Besides tax information, CbCRs include data on profits reported in each country, and on total revenues split between related- and unrelated-party revenues. These variables are not usually present in other datas ets, or at least not with the same geographical coverage as CbCRs.
- *More extensive geographic coverage*: MNEs are required to report their activities in every jurisdiction in the world where they have operations, including countries for which coverage in other datasets is generally minimal. For example, the Orbis database has a good coverage of European enterprises but a low coverage for those in United States, as well as in some investment hubs and developing economies.10
- *Comprehensive MNE perspective on its global activities*: in the CbCR, MNEs provide information on their global activities, which highlight the linkage

[9] Previous analyses on the measurement of BEPS were mainly based on financial accounts data (OECD, 2015a) or FDI data (Acciari et al., 2015).
[10] See footnote 8 on investment hubs.

between the entities and the MNE group. In other datasets, such as Orbis, multiple steps are needed before it is possible to identify the MNE group and its country of operation. The statistics developed by the National Institute of Statistics in Italy are aimed at analysing key indicators of national enterprises belonging to MNE groups; however, the data are only available for the national economy.

- *D*omestic *and foreign operations of MNEs are included in one single dataset*: In the CbCR, MNEs provide information on their foreign operations and their operations in the country of tax residence. This presents an advantage over the FATS statistics where national operations of foreign MNEs are not covered.
- *Data consistency and comparability across countries*: CbCR data are intended to be easily and directly comparable across countries as it was developed under an international standard.

Although CbCR data only refers to the largest MNEs, i.e. those with global revenues above €750 million, FATS statistics also include smaller MNEs, as they are based on census surveys for which the response rate is 72 per cent (for 2017 data). Although other sources estimate the values of non-respondents, the companies concerned may not be willing to disclose information on their international activities, which would eventually incur a low fine. CbCR filing, instead, represents a fiscal obligation for MNEs. Furthermore, in FATS statistics, section K "Financial and Insurance Activities" of the NACE classification does not include certain indicators, such as turnovers, value added and investments, whereas CbCR data also includes the number of MNEs active in these industries, and which account for a significant share of CbCR indicators, as will be discussed in more detail later. The CbCR and FATS datasets are not directly comparable as the variables are defined differently.

Several caveats need to be mentioned with respect to CbCR data. Some of these relate to the structural design of the report and the way information is exchanged between tax authorities. Other caveats are expected to be transitory and addressed in the future, as both MNEs and tax authorities gain increased familiarity with the new tool in a learning-by-doing process.

As to the "structural" limitations, CbCRs only contain information on larger MNEs with global revenues of €750 million or more. Furthermore, as each tax authority has access to information on domestic and foreign MNEs with operations in their respective jurisdictions; smaller MNEs, or MNEs with a smaller scale of operations (e.g. those only present in Asian economies), are not represented in the dataset available to the Italian tax administration. Insights into the under-representation of foreign MNEs included in the dataset can be drawn by comparing it with the OECD dataset. For each foreign reporting country, we compared the number of CbCRs included in the present dataset with the total number of CbCRs in the OECD

dataset. For France, the coverage of the present dataset in terms of the number of CbCRs is high (76 per cent). For Luxembourg and Austria, the share is above 50 per cent. For other European Union countries in the list, the data coverage of the national dataset ranges between 20 and 50 per cent. For non-European Union countries, such as Canada, Japan and the United States, the coverage is below 20 per cent.

Another caveat is that the CbCR is a new tool, so MNEs and tax administrations are still engaged in a learning-by-doing process. As a result, CbCR data presents several limitations that can affect the quality of the data, which calls for extreme caution in the interpretation of results, at least for fiscal year 2016. A thorough analysis of the limitations of CbCR data is given in the disclaimer of accompanying the release of CbCR statistics (OECD, 2021a), as well as in the relevant section of OECD (2021b). One of the main limitations is the treatment of intra-company dividends in profits or losses before tax. In the absence of specific guidance on this (OECD, 2015b), jurisdictions have taken different approaches, with some requiring MNEs to include them, others excluding them, and others still not issuing any guidance. This has created inconsistencies across CbCRs, hampering the interpretation of the reported profit (loss) data, particularly in the country of the UPE, and the comparability of CbCR data across countries. As for Italian MNEs, analysis on this issue showed that a majority of Italian UPEs included dividends in their profits (losses).[11]

Another limitation is that data may be underestimated in some jurisdictions due to a limited submission of CbCRs. For MNEs with their UPE in the United States, CbCR filing was voluntary in 2016, data for that year might therefore under-represent the magnitude of the global activities of MNEs from the United States. This might also occur for other countries for which a low number or no CbCRs were available. This implies that the positioning of some countries in the global allocation of MNE activities might be misrepresented in this dataset. The present analysis therefore describes the data from available CbCRs.[12]

CbCR raw data also presented several recurring filing errors. The following section explains the approach undertaken to address the issue and build the dataset.

[11] "Note on country-specific analysis: Italy" (n.d.), www.oecd.org/tax/tax-policy/italy-cbcr-2016-country-specific-analysis.pdf.

[12] Furthermore, for some of the available CbCRs compiled by foreign MNEs, the country of the UPE was not indicated, therefore it was not possible to analyse it.

3. Creation of the dataset

To understand the dataset, it is useful to provide an overview of what a CbCR report looks like, of the information contained therein and key CbCR concepts, together with an explanation of how they have been used in the construction of the dataset.[13]

CbCRs are composed of three tables. In table 1, MNEs report the allocation by tax jurisdiction of the following variables: (i) total revenue; (ii) unrelated-party revenues; (iii) related-party revenues; (iv) profit (loss) before income tax; (v) income tax paid; (vi) income tax accrued; (vii) stated capital; (viii) accumulated earnings; (ix) number of employees; and (x) and tangible assets (other than cash and cash equivalents).

Information is reported by MNE subgroup, representing the combination of entities of the MNE group operating in one tax jurisdiction. If an MNE operates in one jurisdiction with more than one entity, data are provided by aggregating values on all the entities in the jurisdiction; it is, therefore, not possible to distinguish how each entity contributes to the total values reported in that jurisdiction.

Table 1 in the CbCRs also provides the following relevant information for the statistical analysis of data:

- *Currency* in which each variable is expressed.
- *Tax identification number (TIN) of the reporting entity*. The TIN is essential to spot potential duplications, and to match CbCR data with other sources (e.g. Italian tax returns and Orbis database).
- *Role of the reporting entity*. This specifies the role of the reporting entity. Possible values are: (i) CBC701 (UPE); (ii) CBC702 (surrogate parent entity - SPE); and (iii) CBC703 (local filing in the framework of an international exchange, intra-European Union exchanges only). The UPE is the entity within the group that directly or indirectly owns a sufficient interest in one or more other entities of the MNE that it is required to prepare consolidated financial statements. The SPE is an entity of the MNE group which has been appointed to act as a substitute for the UPE when filing the CbCR in that entity's jurisdiction of tax residence, on behalf of the MNE group. Entities act as SPEs in case the country of their UPE has not implemented the CbCR filing. Local filing is an alternative residual reporting mechanism and allowed in specific circumstances when neither UPE nor the SPE files the CbCR. The

[13] The fiscal year 2016 figures are based on the voluntary filing of CbCR by a few countries, including the United States. CbCR filing became mandatory as of 2017, including for the United States. This might lead to non-negligible differences of the results based on these two reporting periods. However, voluntary filing in the UPE jurisdiction was quite attractive for MNEs as a mean to avoid the compliance burden of providing "local filing" in many different jurisdictions. The authors only had privileged access to 2016 data for this analysis. This is a limitation of the study, but this work might be updated in the future. CbCR template and key definitions are available in OECD (2015b).

role of the reporting entity has been used in the statistical analysis to identify the "nationality" of the MNE group: MNE groups with their UPE in Italy are considered Italian MNEs, and MNE groups with their UPE in foreign countries are considered foreign MNEs. The role of the reporting entity has also been used to address duplication issues.

- *Time stamp* (date and time of compilation). This information has been used to address duplications issues, namely when multiple identical CbCRs were submitted, we keep the most recent one.

Table 2 of the CbCR reports information on the main business activities (e.g. R&D, production and sale) for all the MNE group's entities by tax jurisdiction. Table 3 contains additional information reported as free text.

When examining CbCR data, it became evident that several filing errors, such as multiple identical submissions or amounts reported using the wrong unit or the wrong currency (see below for more detailed explanation) were present in the tables. This required a series of preliminary steps to clean the dataset into one which could be functional for statistical analysis; a conservative approach was taken to avoid arbitrarily modifying the dataset, while guaranteeing its consistency. These cleaning steps identify recurring and macroscopic reporting errors and apply solid approaches to make the dataset consistent and reliable, without altering the integrity of the information provided by MNEs.

A first set of cleaning actions concerned duplications. Raw CbCR data presented duplications in the form of multiple identical reports for the same MNE group, but mainly from different reporting entities with different reporting roles. The main cleaning approach consisted of keeping the report sent by the UPE and discarding the others. In a few instances, multiple identical reports were sent by different UPEs located in different countries; in such cases other criteria were used, e.g. searching for the entity to identify the correct country of the UPE, or keeping the report sent by the UPE located in the country with the highest amount of revenues and employees.

Further cleaning steps were needed to correct irregularities relating to currency and units. As to currency corrections, the CbCR is supposed to be filed using one single currency for all variables in all jurisdictions; there were, however, instances in which country-specific currencies were used for the same variables, or that different variables were reported using different currencies. Data were converted to Euros using the relevant exchange rate in 2016. As for unit corrections, although amounts should be provided in full units, in some instances data were provided in thousands or millions. In some cases, MNEs explicitly reported in table 3 of the CbCR to have used different units when compiling tables 1 and 2; these discrepancies were found by means of a manual check of the free text reported in table 3. Furthermore, an automatic check for anomalous low or anomalous high values was carried out. Suspect data was compared with Orbis data for the same reporting entity and the

relevant correction was applied where needed.

Unit corrections for employees were needed in addition to unit corrections for amounts. Errors relating to numbers of employees mainly derive from the fact that in the CbCR filings MNEs multiplied the correct employee number by 1,000 or by 1,000,000, as they had done for other variables such as revenues or profits; in fact, CbCRs are mainly filed using financial accounts data, generally expressed in thousands or millions, which needed to be multiplied to express them in full units for CbCR purposes. These errors were identified by spotting anomalous high values and comparing them with Orbis database.

Following this cleaning process, we obtained a dataset of 1,251 MNEs and 43,694 subgroups headquartered in 37 jurisdictions and operating in 233 jurisdictions.

4. Global presence of Italian MNEs

The dataset revealed that among 1,251 MNEs identified, 138 were Italian MNEs and 1,113 were foreign MNEs.

By the number of MNEs , the United States ranks first, with 152 MNEs, followed by Italy and France, with 137 and 138 MNEs, respectively (table 1). Taken together, the top 10 countries accounted for 67 per cent of the total number of MNEs.[14]

Table 1. Top 10 countries of ultimate parent entity, by number of MNEs with at least one entity in Italy, 2016

Country of ultimate parent entity	Number of MNEs
United States	152
Italy	**138**
France	137
United Kingdom	93
Netherlands	72
Luxembourg	63
Spain	62
Switzerland	44
Austria	37
Sweden	36
Sum of top 10	**834**
World	**1 251**

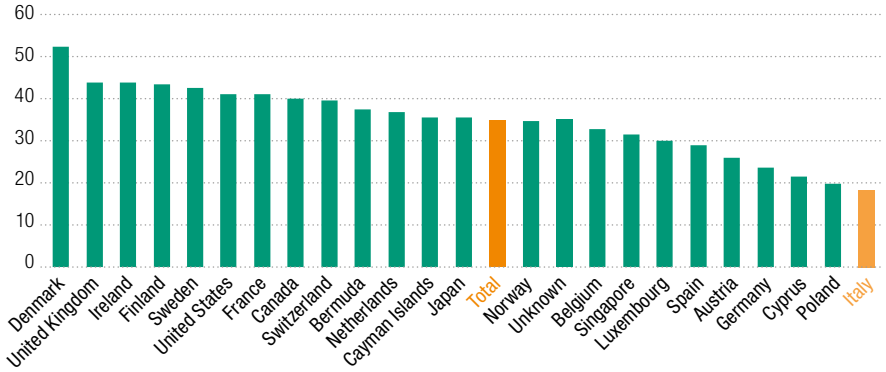
Source: Authors' calculations based on the 2016 CbCR micro-level data made available to the Department of Finance, Ministry of Economy and Finance, Italy.

[14] Non-obvious figures referred to some countries, such as the absence of China among Asian MNEs, or the low number of German MNEs, should be interpreted with caution as they may be explained by inconsistencies in the filing of the CbCR, as 2016 was the first year of collection. Nevertheless, the low figure for Germany might be linked to the fact that a low proportion of businesses are incorporated and that MNEs can, at times, be unincorporated (European Commission, 2012).

Within the CbCR the number of subgroups by country indicates the number of MNEs with at least one entity located in the country.[15]

The average number of subgroups by MNE provides a picture of their average geographical reach. On average, Italian MNEs are present in 18.3 countries (figure 1), which is significantly below the average for all the MNEs included in the dataset (34.9), and below the average of MNEs based in the United Kingdom (43.9), the United States (41.1), France (41.1) and Spain (30.1).

Figure 1. Average number of MNE subgroups, by country of ultimate parent entity, 2016



Source: Authors' calculations based on the 2016 CbCR micro-level data made available to the Department of Finance, Ministry of Economy and Finance, Italy.
Note: An MNE subgroup indicates the combination of MNE group entities operating in one tax jurisdiction.

In terms of geographical distribution, countries were ranked by the number of Italian MNEs with a presence in those countries, which enabled us to obtain a list of the top 10 destination countries. The same was done for MNEs with different nationalities, which enabled us to obtain the respective top 10 lists. We then compared these lists with the top 10 list computed for Italian MNEs to analyse the similarity in global reach, by the nationality of the MNE. Table 2 reports the matching share of destinations in the top 10 list of foreign MNEs with their UPE in selected OECD countries (France, Spain, the United Kingdom and the United States) with the top 10 list of Italian MNEs. For instance, French MNEs have the highest degree of similarity with Italian MNEs, as 88 per cent of destination economies in the top 10 list of French MNEs are also present in the top 10 list of Italian MNEs. In terms of similarity with investment destinations of Italian MNEs, French MNEs are followed by MNEs based in the United Kingdom, the United States and Spain.

[15] An MNE subgroup indicates the combination of entities of the MNE group operating in one tax jurisdiction.

Table 2. Comparison of top 10 destinations of Italian and Foreign MNEs, 2016
(Percentage)

Country of ultimate parent entity	Matching share of destinations with Italian MNEs
France	88
United Kingdom	75
United States	75
Spain	63

Source: Authors' calculations based on the 2016 CbCR micro-level data made available to the Department of Finance, Ministry of Economy and Finance, Italy.

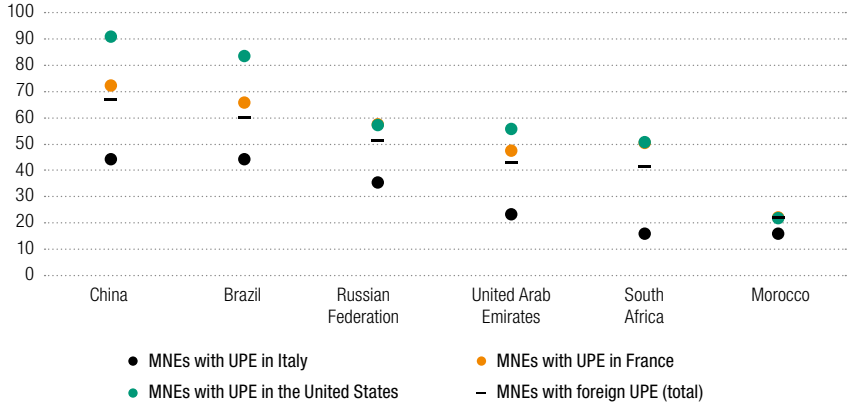
When focusing on the presence of MNEs by region and main countries, this similarity appears to be confirmed. We analysed, for each geographical region and for MNEs with their UPE in Italy and in other selected OECD countries, those host economies where at least 25 per cent of such MNEs were present. The host economies where Italian MNEs are more likely to be present are also those where American, British, French and Spanish MNEs are more likely to be located, for example, China, Hong Kong (China), India and Singapore.

However, the main difference between Italian and foreign MNEs appears to be the magnitude of their global reach, as highlighted by two peculiarities. In the first place, for each region, the number of host economies where at least 25 per cent of MNEs were present is lower when considering Italian MNEs compared to foreign MNEs. China, Hong Kong (China), India and Singapore are the only four jurisdictions in Asia where 25 per cent or more Italian MNEs were located, whereas American, British and French MNEs, as well as all foreign MNEs, were also present in additional countries in the area, such as Indonesia, Malaysia and Thailand.

Another distinctive feature of Italian MNEs is that the share of Italian MNEs present in locations considered to be "essential places to be" is lower than the share of foreign MNEs that were operational in those same locations. For example, when considering the presence of Italian and foreign MNEs in China, the share is equal to 44 per cent for Italian MNEs, 72 per cent for French MNEs, 91 per cent for United States MNEs, and an average of 67 per cent for all foreign MNEs (figure 2).

The different reasons for the low global reach of Italian MNEs compared to foreign MNEs are beyond the scope of this paper, and could be explained by certain characteristics of Italian MNEs affecting their global competitiveness, e.g. their relatively low levels of productivity and innovation, and ownership structures with a high proportion of family-owned and managed businesses (Accetturo et al., 2013). Several studies provide evidence of low productivity and low innovation, as well as the prevalence of family-owned and managed businesses.

Figure 2. Share of MNEs from selected OECD countries present in selected foreign jurisdictions, by country of UPE, 2016 (Percentage)



Source: Authors' calculations based on the 2016 CbCR micro-level data made available to the Department of Finance, Ministry of Economy and Finance, Italy.

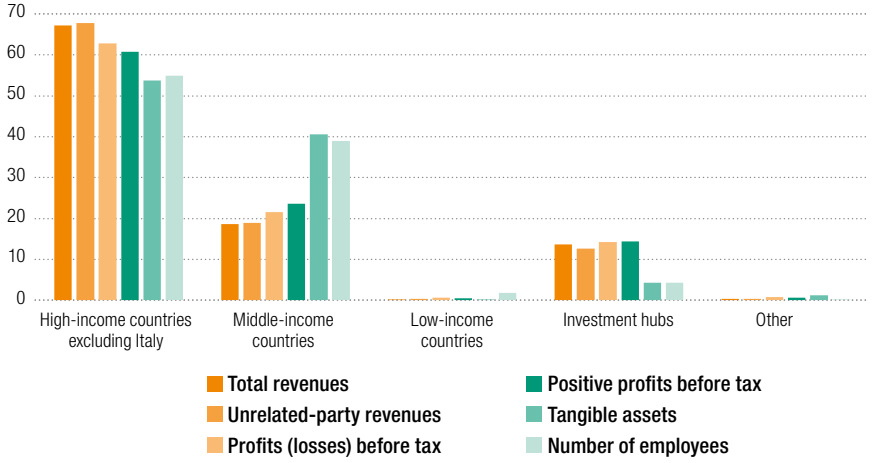
5. Geographical distribution of activities

A majority of Italian MNEs' activities are reported in Italy. For example, Italian MNEs reported 56 per cent of their revenues from unrelated-party transactions in Italy, and 44 per cent in other countries (table 3). When comparing the domestic and foreign contribution to global activities of Italian MNEs with that of foreign MNEs it appears that, on average, the share of activities carried out domestically is more significant for Italian MNEs (table 3) compared to foreign MNEs (table 4).

The geographic distribution of the operations of Italian MNEs can also be analysed with respect to the distribution of activities across country groups, as classified by income levels.[16] Figure 3 presents the distribution of the foreign activities of Italian MNEs by country groups. High-income countries (excluding Italy) account for the highest share of all indicators, namely for the greatest share of revenues (nearly 70 per cent for both total revenues and unrelated-party revenues) and profits (about 60 per cent) reported in foreign countries; however, they also account for a relatively lower, but still significant share of tangible assets and employees (54 and 55 per cent, respectively). Middle-income countries have a relatively higher importance in terms of tangible assets and employees (41 and 39 per cent, respectively) than they

[16] Investment hubs (see footnote 8) are located across the spectrum of income groups based on the World Bank classification. In line with OECD (2020), when an economy is included in the investment hub category, it is excluded from the income group, to which it would otherwise belong.

Figure 3. Italian MNEs: share of foreign activities, by group of host economy and indicator, 2016 (Percentage)



Source: Authors' calculations based on the 2016 CbCR micro-level data made available to the Department of Finance, Ministry of Economy and Finance, Italy.

Note: Country groups reflect the World Bank classification by income level. "Investment hubs" refer to economies with a share of inward FDI stock as a percentage of GDP greater than 150 per cent (see footnote 8). "Other" reflects economies for which classification by income level is not available, as well as unknown jurisdictions.

do in terms of revenues (19 per cent for both total revenues and unrelated-party revenues) and profits (21 per cent). Investment hubs, as can be seen from figure 3, have a relatively higher share of revenues (14 per cent for total revenues and 13 per cent for unrelated-party revenues) and profits (14 per cent), as compared to tangible assets and employees (4 per cent for both variables). This feature is likely linked to tax planning considerations that deserve specific analysis,[17] but which is out of the scope of this paper. In low-income countries, MNEs activity appears to be more focused on labour-intensive industries but less inclined to choose low-income countries to invest in tangible assets; this may, in turn, explain the low contribution to profits through their low value-added activities. As a matter of fact, low-income countries represent 2 per cent of total employees, but almost 0 per cent of tangible assets and less than 1 per cent of profits.

The analysis of the contribution of domestic and foreign MNEs to their total activities reported in Italy shows that foreign MNEs represent only 30 per cent of positive profits and 35 per cent of tangible assets. In terms of employees, foreign MNEs report 603,000 employees in Italy, whereas Italian MNEs report about 803,000

[17] See Bratta et al. (2021) for this kind of analysis based on CbCR microdata.

Table 3. Italian MNEs: distribution of activities, by domestic or foreign economy and indicator, 2016 (in millions of euros, number and percentage)

Italian MNEs activities	Total revenues		Related-party revenues		Unrelated-party revenues		Profits (losses) before tax		Positive profits before tax		Tangible assets		Number of employees	
	Values	Share (%)	Values	Share (%)	Values	Share (%)	Values	Share (%)	Values	Share (%)	Values	Share (%)	Number	Share (%)
Domestic	449 112	56	109 377	57	340 326	55	19 024	36	43 648	52	203 128	55	802 791	50
Foreign	359 772	44	82 696	43	277 462	45	33 153	64	40 555	48	164 655	45	801 089	50
World	808 884	100	192 073	100	617 788	100	52 177	100	84 203	100	367 783	100	1 603 880	100

Source: Authors' calculations based on the 2016 CbCR micro-level data made available to the Department of Finance, Ministry of Economy and Finance, Italy

Table 4. Foreign MNEs: distribution of activities, by domestic or foreign economy and indicator, 2016 (in millions of euros, number and percentage)

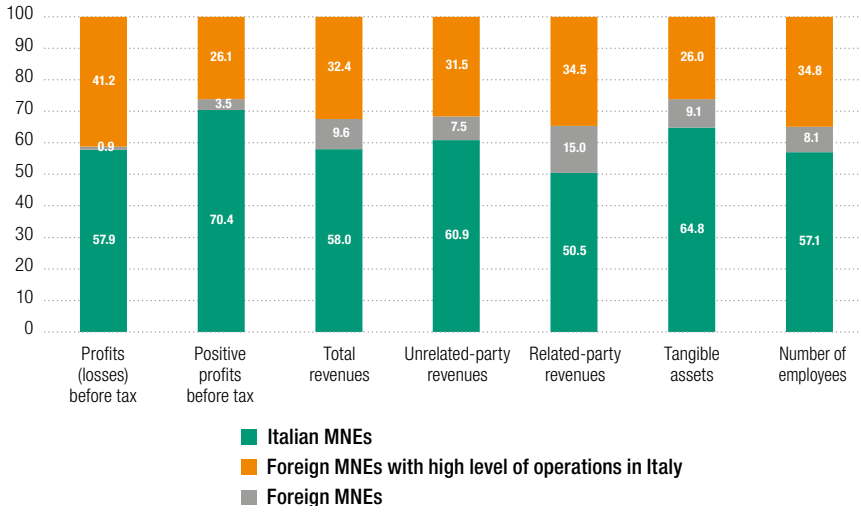
Foreign MNEs activities	Total revenues		Related-party revenues		Unrelated-party revenues		Profits (losses) before tax		Positive profits before tax		Tangible assets		Number of employees	
	Values	Share (%)	Values	Share (%)	Values	Share (%)	Values	Share (%)	Values	Share (%)	Values	Share (%)	Number	Share (%)
Domestic	11 509 200	60	1 737 277	40	9 775 499	65	411 092	40	514 454	38	1 842 748	37	17 788 897	40
Foreign	7 826 066	40	2 648 581	60	5 177 281	35	606 058	60	829 096	62	3 178 083	63	26 525 894	60
World	19 335 266	100	4 385 859	100	14 952 780	100	1 017 150	100	1 343 550	100	5 020 832	100	44 041 791	100

Source: Authors' calculations based on the 2016 CbCR micro-level data made available to the Department of Finance, Ministry of Economy and Finance, Italy.
Note: Activities of MNEs for which the country of the ultimate parent entity (UPE) is unknown are excluded. Domestic activities refer to activities reported in the country of the UPE (e.g. for French MNEs, domestic activities are those reported in France).

employees in Italy. Analysing the incidence of related-party revenues on total revenues, it appears that the share of related-party revenues was more important for foreign MNEs (33 per cent) than for Italian MNEs (24 per cent). This might be an indication that foreign MNEs choose to locate in Italy to greater extent for production purposes compared to domestic market-seeking purposes.

Within foreign MNEs it is, however, possible to identify a subset of foreign MNEs with a high level of operations in Italy. These were identified by analysing foreign MNEs for which Italy represented an important segment of their worldwide activities, as measured by the share of unrelated-party revenues, tangible assets or employees, and whether it is equal or greater than the importance of Italy for the Italian MNE at the 20th percentile. This subset is composed of 26 MNEs active in different sectors, but with a prevalence of MNEs active in the chemical, telecommunications and energy sectors. These MNEs account for 9.6 per cent of total revenues, reflecting a share of 15 per cent of related-party revenues and 7.5 per cent of unrelated-party revenues (figure 4). They also account for a significant share of tangible assets (9.1 per cent) and employees (8.1 per cent). In contrast, their contribution is modest in terms of profits reported in Italy (0.9 and 3.5 per cent, respectively, for total profits and positive profits before tax), and their incidence of profits on revenues is lower than the other foreign MNEs present in Italy. High levels of MNE operations in Italy may reflect three realities: (i) foreign investment funds that have acquired Italian companies; (ii) foreign MNEs for which Italy is an important market, or in terms of production plants; and (iii) MNEs that have experienced restructurings resulting in a different location of the UPE but who have maintained a high level of operations in Italy.

Figure 4. Contribution of foreign MNEs with high level of operations in Italy to total MNE activities in Italy, by indicator, 2016 (Percentage)



Source: Authors' calculations based on the 2016 CbCR micro-level data made available to the Department of Finance, Ministry of Economy and Finance, Italy.
Note: Foreign MNEs with a "high level of operations in Italy" were defined as foreign MNEs for which Italy represented an important segment of their worldwide activities, as measured by the share of unrelated-party revenues, tangible assets or employees in Italy being equal to or greater than the share of Italy for the Italian MNE at the 20th percentile.

6. Global activities of Italian MNEs by sector

MNEs are not required to indicate their activity code in the CbCR; however, CbCR data can be matched with other data sources to complement this data. For the purposes of the present analysis, the database of Italian tax returns and the Orbis-BvD database were used to identify the relevant activity code of the UPE, and thus assign it to the MNE group whose information is reported in the CbCR. For several UPEs, the activity code was "activities of holding companies" or "activities of head offices"; it is not unusual that an UPE is a company with shares in other companies in the MNE group that undertake real activities. In other words, the UPE operates in certain sectors through companies it has control over, but whose information is nonetheless reported in the CbCR. For these UPEs, a further analysis of available public financial accounts was conducted to identify, where possible, the real sector of activity.

The analysis presented in this section is based on the MNEs' main activity, as identified through the above-mentioned process. However, it is worthwhile noting that the CbCR dataset is focused on the largest MNEs, which can be active in

multiple and differentiated sectors. Due to the large scale of operations of these MNEs, the magnitude of secondary business activities is not necessarily negligible in terms of the variables reported in the CbCR.

Figure 5 represents the number of MNEs for each sector and shows the relative contribution of each group of sectors to the total value of revenues, profits, tangible assets and employees of Italian MNEs included in the dataset. Industrial activities represent the major contribution in terms of number of MNEs (70),[18] followed by services (50) and wholesale and retail trade (18), while no MNEs are found in agriculture, forestry and fishing.

The services sector accounts for the highest contribution to the global activities of Italian MNEs in the dataset (figure 6), with over 50 per cent of the services sector MNEs were in financial, insurance and real estate activities. The only exception is tangible assets, where the transportation and storage industry also plays a significant role. Another interesting aspect is the high share of profits in information and communication.

The contribution of the services sector to total revenues appears to be higher in the present dataset than other existing datasets.[19] This may be explained by different sample characteristics, especially by the CbCR sample being limited to the larger MNEs with global revenues of at least €750 million.

7. Conclusions and policy implications

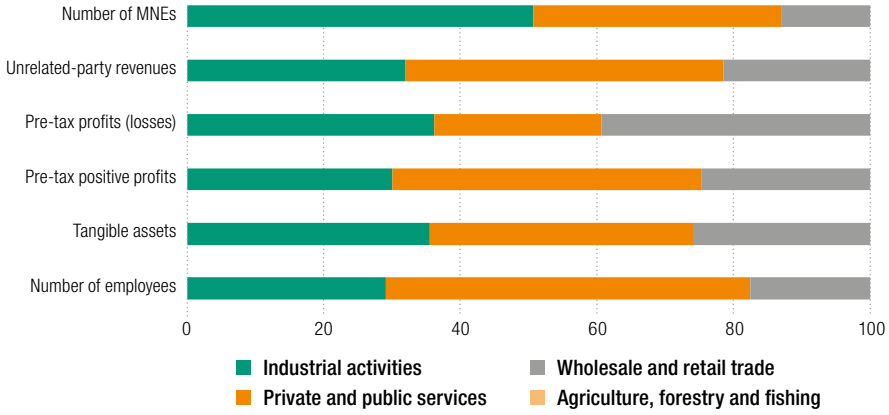
Overall, the descriptive analysis of the global activities of Italian MNEs, as reflected in the 2016 CbCR data suggests that the geographical allocation of Italian MNEs is quite similar to that of foreign MNEs in terms of top countries of presence. The host economies where Italian MNEs are more likely to be present are also those where American, British, French and Spanish MNEs are also more likely to be located. This seems to suggest that large MNEs may follow similar choices when deciding the locations of their foreign affiliates, and that country characteristics, such as geographical location, labour availability, level of infrastructures, tax systems, may explain this homogeneous behaviour. Further analysis is needed to confirm this initial insight.

Despite this similarity, the global reach of Italian MNEs is relatively smaller when compared to that of foreign MNEs, both in terms of the number of jurisdictions

[18] Industrial activities include manufacturing and other industrial activities, and in accordance with the following sections of the NACE Rev. 2 Classification of economic activities: B. mining and quarrying; D. electricity, gas, steam and air conditioning supply; E. water supply; sewerage, waste management and remediation activities; and F. construction.

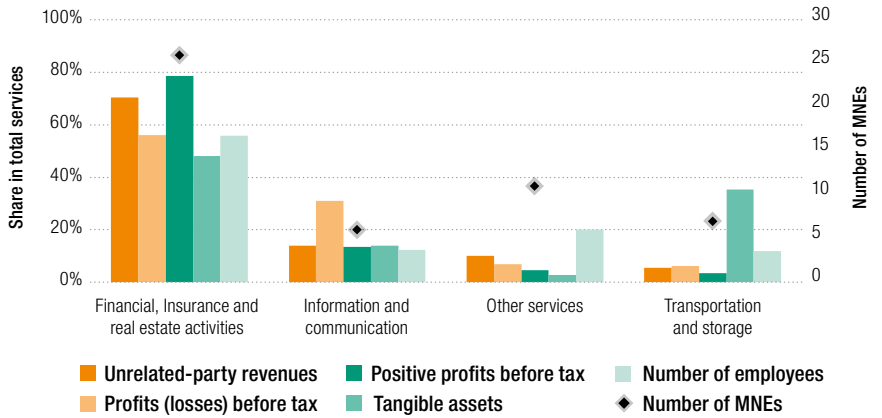
[19] For example, OECD's Activities of Multinational Enterprises (AMNE) dataset and the data compiled by the Italian Trade Agency and Polytechnic University of Milan (see Italian Trade Agency, 2017).

Figure 5. Global activities of Italian MNEs, by sector and indicator, 2016 (Percentage)



Source: Authors' calculations based on the 2016 CbCR micro-level data made available to the Department of Finance, Ministry of Economy and Finance, Italy.
Note: Share in total sectors. Industrial activities include manufacturing and other industrial activities, and in accordance with the following sections of the NACE Rev. 2 classification of economic activities: B. mining and quarrying; D. elecrticity, gas, steam and air conditioning supply; E. water supply, sewerage, waste management and remediation activities; F. construction.

Figure 6. Global activities of Italian MNEs in services, by industry and indicator, 2016 (Percentage share in total (left axis) and number of MNEs (right axis))



Source: Authors' calculations based on the 2016 CbCR micro-level data made available to the Department of Finance, Ministry of Economy and Finance, Italy.

where Italian MNEs are present, but also in terms of the share of national MNEs located in the "places to be", i.e. in those destinations where MNEs from various other countries are present. Additionally, domestic activities represent a greater share of Italian MNEs' activities than they do for foreign MNEs. This may indicate that Italian MNEs present structural weaknesses, which potentially limit their global reach. This issue could contribute to the deliberations of policymakers when formulating measures to increase the global competitiveness of Italian MNEs.

The distribution of activities across country groups, grouped by income-level, shows that the foreign activities of MNEs are mostly concentrated in high-income countries. Middle-income countries have a relatively higher importance in terms of tangible assets and employees than they do in terms of revenues and profits; the opposite holds true for investment hubs, as they account for a higher share of profits and revenues than they do in terms of tangible assets and employees. This may provide an initial insight on possible tax planning strategies – an issue that is out of the scope of the present analysis and will be explored in other research.[20] As to low-income countries, their contribution to foreign activities appears to be limited to the employment dimension and seem to be less attractive for the location of tangible assets, which may explain the low contribution to profits through their low value-added activities.

The analysis on the presence and operations of foreign MNEs in Italy suggests that the contribution of Italian MNEs to total activities reported in Italy by all MNEs is predominant. This implies that foreign MNEs locate in Italy mainly for production purposes, and that a subset of foreign MNEs have a high level of operations in Italy but a lower level of reported profits.

The sectoral analysis shows that, although industrial activities are the most populated category in terms of the number of Italian MNEs, the highest contribution to the global activities of Italian MNEs comes from the services sector.

In conclusion, by utilizing this novel and rich dataset, our study provides additional information on some of the big questions surrounding the behaviour of MNEs – questions which are often left unanswered due to the lack of data. Similar exercises performed by other national administrations could help researchers obtain clearer information on the global activities of MNEs and enable policymakers to have better insights on the positioning of a country in the global allocation of the economic activities of MNEs.

[20] See Bratta et al. (2021) for this kind of analysis based on CbCR microdata.

Future research using CbCR data may support policymakers in their efforts to assess the role played by their respective countries in GVCs, as well as the strengths and weaknesses of the national context, in terms of its attractiveness for foreign companies. Policymakers also have to consider introducing tax policies to enhance investments (UNCTAD, 2022).

Currently, however, not all countries benefit from the analysis of CbCR data. Developing economies continue to face significant challenges in meeting CbCR requirements, and only a small number of them are currently able to receive the CbCRs of other countries. Accordingly, capacity building and technical assistance efforts are needed to promote implementation of CbCRs (OECD, 2021c).

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